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RELOCATION OF PHYSICIANS

A PREREQUISITE TO BETTER MEDICAL CARE

CHAIRMAN'S ADDRESS

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Most of the current controversy in respect to medical care centers on methods of paying for service rather than on how the service is to be provided. These are separate but intimately related questions. The former is likely to be determined finally as a political issue, while the latter should be solved by the medical profession itself. Since the physician is the central figure in any scheme of medical service, primary consideration must be given to placing physicians in areas where they are most needed. Although persons residing in certain localities and belonging to underprivileged classes of the population have illness rates somewhat higher than those of people living under better circumstances, a straight population enumeration gives a fairly accurate measure of the relative needs for medical service in one area as contrasted with another. Unfortunately, wealth more than population normally determines the number of physicians to be found in the average community.

As compared with recent years, the distribution of physicians appears to have been more equable at the beginning of this century. According to tradition and such data as are readily available, it would seem that physicians then were to be found in every hamlet and even at some of the crossroads. Since that time there has been a progressive decline in the numbers of rural physicians and an increasing tendency for more of the recent graduates to locate in the larger urban communities. Moreover, a simple numerical count does not tell the whole story. Rural physicians are much older, and hence their expectancy in years of professional service is less than for those in centers of population.

For purposes of this discussion, the year 1940 is taken to represent normal peacetime conditions. War abroad had stimulated the domestic economy to a point where recovery from the depression was nearly complete. Furthermore, the two basic documents on which this paper is based, the 1940 United States Census Reports [1] and the directory of physicians,[2] were current for that year. Data for these publications were gathered before the normal way of life had been materially disturbed by the national Selective Service and training program.

In 1940 there were 175,000 physicians listed in the directory or 1 for each 751 persons in the continental United States. Among the several states the number of physicians varied from 1 for every 492 persons in New York State to 1 for every 1,459 in Mississippi. However, about 10,000 of the total group were designated as retired and 4,800 as in federal service. This reduced the physicians available for local service to approximately 160,000. Of this number nearly 15,000 occupied full time positions in institutions, 6,000 were teaching or combining hospital and teaching work, and approximately 2,600 were employed full time in state and local health departments. With few exceptions the others, numbering about 136,000, were engaged in private practice.

From the standpoint of capacity to serve, the count of 160,000 physicians available for local service is somewhat misleading. This enumeration includes medical personnel of all age groups; however, Ciocco and Altman [3] have found that the service performed by a physician in private practice varies decidedly with age. The activity of an average private practitioner reaches a peak of approximately 170 patients per week in the age interval between 35 and 40 and continues almost on a plateau for a comparatively few years. After that the physician faces with advancing years a continuous decline in patient load which, without doubt, is closely correlated with capacity to serve. Moreover, the practice of a young physician just beginning his career undergoes a building up period of several years during which he sees fewer patients than he could handle, simply because he has not yet won the confidence of the community.

Curve A in the chart illustrates the service cycle experienced by an average active physician and emphasizes the necessity for establishing criteria other than simple numerical counts of physicians for estimating the professional resources of a community. From this curve appropriate measures of a physician's capacity for service at each year of life may be estimated. Such index values represent approximate service equivalents [4] of physicians at different ages. On this basis an average physician of 26 renders service equal to approximately one fourth of that which he will render in his fortieth year. The fraction increases to three fourths when he is 31 and reaches 100 per cent before he is 40. The decline of activity with advancing age is somewhat more gradual. The fraction falls to three fourths when he is 53, one half at 64 and one fourth at 75 years. Naturally this does not imply that all physicians operate

From the States Relations Division, Bureau of States Services, U. S. Public Health Service.

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1. Sixteenth Census of the United States, 1940 Population: First series, number of inhabitants, United States summary, United States Department of Commerce, Bureau of the Census, 1941.

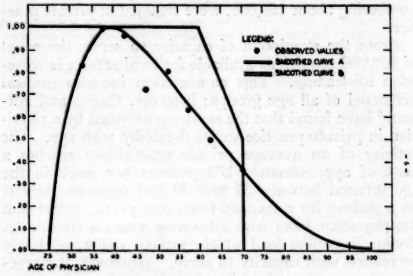
2. American Medical Directory, ed. 16, Chicago, American Medical Association Press, 1940.

3. Ciocco, A., and Altman, I.: The Patient Load of Physicians in Private Practice: A Comparative Statistical Study of Three Areas, Pub. Health Rep. **58**: 1329-1351 (Sept. 3) 1943. Also unpublished data from Ciocco's and Altman's study showing numbers of patients seen per week by physicians in five year age intervals.

4. Pennell, E. H.: Location and Movement of Physicians—Methods for Estimating Physician Resources, Pub. Health Rep. **59**: 281-305 (March 3) 1944. Pennell defines service equivalent as "the decimal fraction obtained by dividing the average weekly number of patients seen by a physician of designated age by the corresponding number seen by a physician at the peak of his career."

at the service capacity indicated. These constants are presented as approximations for the average active practitioner. When for a given community the total number of physicians at each age is multiplied by the fraction that expresses their combined service capacity and the results are added, there is provided a comparative estimate of existing local physician resources which is more revealing than a numerical count.

For certain portions of the country and among particular population groups the deficit between physicians in practice—whether considered in terms of a simple enumeration or a calculated capacity to serve—and the number needed for adequate coverage is even more pronounced than when figures are completed on the basis of broad areas. For example, when physician totals are analyzed from the standpoint of community characteristics, one is impressed by the tendency of physicians to locate in areas that present attractions in the form of wealth, physical facilities essential to good medical practice and the presence of other physicians, particularly those representing the specialties. Since wealth seems to be the dominant factor, it will be analyzed first. To simplify the presentation, actual



Smoothed curves portraying *A*, relative number of patients seen in a week in 1942 by active physicians of different ages engaged in private practice (number seen at age 40 equals 1.00); *B*, full utilization of physicians to age 60, declining activity from 60 to 70 and retirement at 70.

physician totals tabulated from the 1940 directory are used henceforth in this paper rather than full service equivalents.

Counties with average annual per capita incomes of less than $100 attract only 45 physicians per hundred thousand of population. In those with per capita incomes of $600 or more, the number of physicians for a corresponding unit is nearly four times as great. Among the younger practitioners these differences are sharply accentuated. Of those in practice under 45 there are only 12 per hundred thousand in the counties with the least per capita income, whereas the proportion increases to 92 in the counties of greatest wealth.

Likewise there is a high degree of association between urban character of a county and the number of physicians located therein. Rural, small city and large city counties,[5] for each hundred thousand of population, average 67, 101 and 179 physicians respectively. That strictly rural counties are at a great disadvantage from the standpoint of availability of medical personnel is strikingly portrayed by these data.

Another factor—itself an indirect reflection of wealth—which influences the tendency of physicians to settle in a particular area is the presence of general hospitals. Comparative data for physicians and hospitals reveal that large numbers of hospital beds reflect increased physician-population ratios. In those six states providing less than 2 beds per thousand of population[6] there were 1,141 persons for each physician, whereas in the ten states affording 4.5 beds or more there were only 522 persons for each practitioner. While the same basic factor—wealth—influences the location of both physicians and hospitals, data assembled by the United States Public Health Service, but not presented on this occasion, show that the presence of a hospital alone serves to attract and retain physicians.

Factors affecting the physician distribution not only weight the total but to an even greater extent influence the location and migration pattern of the younger men. In 1938, for example, of a group of young practitioners graduated in 1935, 57 per cent remained in large cities and 18 per cent were found in rural areas. In contrast, study of a group of 92,000 physicians long in practice shows that 49 per cent of these established physicians were in large cities and 23 per cent in rural areas at this date. Even when the latter distribution is used as a base—itself depicting a smaller proportion of physicians than of the general population in rural areas—it is evident that new recruits are particularly inclined to begin initial practice in large cities. Moreover, rural communities not only fail to attract a proportionate supply of recent registrants but also they hold relatively fewer physicians who have developed practices than do urban localities. Analysis of the migration pattern for established practitioners whose period of professional activity extended over a subsequent fifteen year interval reveals that rural areas suffered a net loss of 10 per cent through transfers to more urban communities. On the other hand, physician migration brought about an actual gain of 10 per cent in small cities, whereas in large cities the effect of such changes on physician totals was practically negligible.

The low rate of recruitment combined with the loss through migration has resulted in an age distribution for physicians in rural areas which is heavily weighted in the advanced age categories. As a matter of fact, physicians in rural counties have a median age of 57 in contrast to a median age of 44 for those in large city counties—a difference of 13 years. Since physicains of the rural group are older, the fact that proportionately more physicians are lost from the profession by death in this than in any other location category is not surprising.

This was the picture in 1940. What are the prospects for the future? To begin with, about one third of the active physicians have been withdrawn from civilian practice. Furthermore, despite all efforts to retain physicians where most needed, the number per unit of population is diminishing at an increased rate in states normally deficient in professional resources. Moreover, as a result of the small number of new recruits who have entered practice in the poorer states during recent years, these states have a distribution weighted with older physicians who, because of their age, are subject to a high death rate. For example, in New York State 9 per cent of the physicians were 65 years of age or over in 1940, while in Arkansas and Maine 25 per cent of all practitioners were in that category. Since

5. Rural, small city and large city counties are defined as counties that do not contain any incorporated place of 2,500 or more inhabitants, counties containing cities of between 2,500 and 49,999 inhabitants and counties containing cities of 50,000 or more persons respectively.

6. The 1942 Census of Hospitals, report of the Council on Medical Education and Hospitals, J. A. M. A. **121**: 1009-1094 (March 27) 1943. Exclusive of all mental and tuberculosis hospitals, infirmary units of institutions and all other hospitals of federal control except hospitals operated by the Bureau of Indian Affairs.

the general scarcity of physicians renders city locations more attractive, the small number of current graduates who will be channeled into civilian practice will be even less inclined than formerly to engage in rural practice. Thus, states with lowest ratios of physicians and the greatest percentage of loss through death and retirement can expect few accretions to the profession.

The figure suggested as the minimum for wartime safety has already been reached or passed in many areas. Perrott and Davis [7] have shown that in 1942 there was approximately 1 active private practitioner per thousand persons for the country as a whole. They estimate that early this year this rate will reach 1 : 1,500. During this year twenty-eight states are expected to have more than 1,500 persons per active private physician. This presents a striking contrast to the six states in a similar position before recruitment for military duty began.

Statistics based on 1940 data show that there was need at that time for relocation of at least 25,000 physicians to bring about a fair measure of equalization in the distribution. Since 1940 the situation obviously has grown worse, owing to the disproportionate loss of physicians from areas formerly deficient. Up to this time there have been practically no replacements.

Because of the present overall dearth of physicians and the widespread augmentation in purchasing power of the American people, urban physicians in civilian practice tend to remain where they are. The relatively few who are now being mustered out of service are, for the most part, older physicians with one form of disability or another. Those with city ties probably will tend to return to their places of residence, while many formerly in rural areas will take advantage of the facility with which city practices can be developed. At present, however, the returning veteran physicians are not sufficiently numerous to make any real impression on the problem.

The great opportunity for mass relocation of physicians will occur after hostilities cease. Already the armed forces contain a large number of physicians who have entered military service directly from hospitals in which they received their intern or residence training. As the war continues, the medical corps will consist more and more of physicians who have never undertaken civilian practice. Moreover, those physicians who engaged in private practice prior to the war soon will have been away for such a period of time that resuming practice will be essentially the same as starting anew.

If, after the war, full advantage is to be taken of the unusual opportunities for equalizing the distribution of physicians, many of the basic difficulties associated with medical practice in underprivileged areas must be overcome. In brief, these difficulties are (1) low income, (2) lack of hospitals and (3) professional isolation. The remedial measures are obvious, though they may not be simple to apply. Matters are further complicated by questions involving both social policy and political expediency.

Combining money assets through a broad program of taxation or insurance would assist materially in solving the economic problem in areas of low per capita income. Another approach would be some degree of subvention for physicians willing to practice in communities where otherwise they could not be assured of a satisfactory financial return. A further requisite for the attraction and stabilization of physicians in rural areas is an arrangement whereby they will have access to appropriate diagnostic and treatment facilities. The growing interest in rural hospitals must not be taken to imply that every rural physician can or should have a fully equipped hospital immediately at his command. Outposts with diagnostic and first aid equipment must suffice for the more remote areas.

Professional isolation suffered by the physicians in rural communities acts as a deterrent to the establishment of medical practice. Recent medical graduates especially are reluctant to locate in places where, because of restricted professional association, their opportunities for further technical development are limited. With the expansion of hospitals and related facilities, however, it will be easier than heretofore to arrange continuing programs of education for physicians serving in rural areas. An additional measure for promoting professional growth is the provision of periodic refresher courses. To this end pilot projects undertaken by certain of the universities and medical societies should be extended, systematized and given a stable basis of financial support.

Another way in which a substantial impression might be made on rural medical practice is that of bringing about more effective utilization of physicians who do elect to practice in those areas. Solution of this question, while applicable to all physicians, is more urgent for those in the less populous regions. Excessive wastage of time and strain imposed by travel, together with responsibility for both day and night calls, taxes to the utmost the physical capacity of the practitioner serving rural communities. In the chart indicating the proportion of patients seen at each age level, curve B is constructed to show the extent to which the effectiveness of physicians at both ends of the age scale might be augmented. Studies [8] show that if maximum use could be made of the professional capacity of physicians at all ages up to 70 years the total volume of physician service available to the general population might be increased by about one fourth. Such a purpose is not likely to be attained unless physicians work as groups, preferably in connection with hospitals or health centers. In this manner both the potential capacity of the younger man can be utilized and the energy of the more experienced physician conserved. Experienced practitioners could then devote much of their time to consultation. By this procedure the younger physician receives seasoned judgment, the older man is relieved of much time and energy consuming detail, and, what is more essential, the patient benefits by the team work.

SUMMARY

Low income, lack of essential facilities and professional isolation contribute to the maldistribution of physicians. If, after the war, full advantage is to be taken of the unusual opportunities for equalizing the distribution, many basic difficulties associated with medical practice in underprivileged areas must be overcome. Combining money assets through a broad program of taxation or insurance would assist materially in solving the economic problem in areas of low per capita income. Arrangements should also be worked out whereby physicians in rural locations will have access to appropriate facilities—either hospitals or health centers. In addition, provision for periodic refresher courses should be an integral part of any scheme for improving and extending medical practice.

7. Perrott, G. St. J., and Davis, B. M.: The War and the Distribution of Physicians, Pub. Health Rep. 58: 1545-1554 (Oct. 15) 1943.

8. States Relations Division, Bureau of States Services, United States Public Health Service, unpublished data.

PRIMARY CARCINOMA OF THE TRACHEA

TREATMENT WITH INTRATRACHEAL RADIUM; RADIOACTIVE IODINE FAILS TO SHOW THYROID ORIGIN

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Carcinoma of the trachea was apparently first recognized by Türck [1] in 1866, at which time he described 2 cases in which the disease was secondary to carcinoma in the esophagus and 1 case in which it was secondary to carcinoma of the thyroid. The first case of primary carcinoma of the trachea was reported by Langhans [2] in 1871. His patient, a man of 40, had suffered from dyspnea for a year and finally died of suffocation. It was found that "his primary disease had originated in the submucous glands and eventually involved not only the trachea but some spread had occurred into the right stem bronchus."

A review of the literature will be made later.

The patient who is the subject of this report is well after two years and presents several problems that are interesting and instructive:

REPORT OF CASE

R. H., a man aged 61, married, a lecturer, whose past history was irrelevant, had a great deal of cough and was very tired during the last six months of 1938. There was no shortness of breath, wheezing or loss of weight. He was quite comfortable during the first six months of 1939, but during the summer his cough returned and he expectorated some blood on several occasions during August and September. By November he was again feeling very tired (possibly because of a very heavy schedule). Every two or three months after November 1939 he had bouts of cough and sputum, which was frequently bloody, but there was no fever. During the later part of 1940, while at an altitude of 4,500 feet for two months, he noticed more shortness of breath than for a long time. Because of the protracted "colds," cough and hemoptyses, he came to Palo Alto, Calif., in December 1940. The cough was somewhat better, but periodically there were bouts of hard coughing, expectoration of some yellow material and somewhat larger quantities of blood. It was not until March of 1941 that he developed wheezing, which not only interfered with his lecturing but reduced his voice to a whisper. This was associated with periods of intense suffocation. He had never seen a doctor about it before 1941. In May, after nearly three years of symptoms, he consulted Dr. Russell Lee, who referred him to me. His weight had fallen to 147 pounds (67 Kg.) from a customary 160 to 165 (73 to 75 Kg.). His father and brother had died of cancer of the lung, and several of the family had had tuberculosis.

Physical examination was negative except for enlarged tonsils and a slightly prolonged expiration at the base of both lungs. X-ray examination of his lungs showed some increased linear markings at both bases but a normal mediastinum. On May 24 bronchoscopy revealed a tumor (fig. 1) just above the carina, occupying at least one half of the lumen of the trachea. It extended over the whole cartilaginous portion of the lower trachea for a distance of 2.5 cm. but apparently spared the posterior portion. Its base was broad and firmer than the pale, lobulated and softer superficial tissue. Biopsies were taken then and at subsequent operations and have been summarized by Dr. David Wood as follows: "The tumor is a low grade, well differentiated primary carcinoma of the trachea. This tumor could well have had its origin from submucosal tracheal glands. Its acinar structure and intra-acinar homogeneous secretion, however, cause the tumor to bear a striking resemblance to neoplastic thyroid tissue. Histogenically its possible origin from aberrant thyroid tissue cannot be definitely excluded. Inability of the tumor to store radioactive iodine does not exclude its possible origin from aberrant thyroid tissue. The possibility of the tumor being metastatic from thyroid tissue elsewhere is extremely remote. Therefore the case at the present time is considered to be one of primary adenocarcinoma of the trachea."

After the second bronchoscopy the patient felt a great relief in his breathing and after five sessions of removing as much tumor as possible its appearance on October 23 was that of a very superficial layer of tumor tissue.

The question arose as to whether this tumor developed from a misplaced anlage of thyroid tissue, although roentgenograms showed no substernal mass suggesting a thyroid gland and

Fig. 1.—Bronchoscopic appearance of tumor.

Fig. 2.—Radium applicator completely folded in the bronchoscope.

laminograms also quite accurately delineated its size and position. We hoped to determine this by use of radioactive iodine, which Dr. Joseph Hamilton of the Radiation Laboratory at the University of California provided. The patient drank a small portion of the material on September 22 and when tested with the Geiger counter September 24 showed intense activity (several hundred counts per minute) in the lower part of the neck. Development of a "cold" prevented bronchoscopy, however.

On October 21 the counter, set close before the neck, gave only 50 counts per minute (4½ times the background). He then drank another dose (200 microcuries) of radioactive iodine, with immediate increase in the general body radioactivity (counts close to the hand, 30 per minute). On this occasion the concentration in the neck was not followed. Two days later, October 23, I removed several pieces of tumor by means of the bronchoscope. Dr. Hamilton examined these but could find no radioactivity in them. This ruled out the presence of normal thyroid tissue but did not necessarily exclude carcinoma of the thyroid, for malignant thyroid carcinoma is known not to collect radioactive iodine as normal or hyperplastic thyroid does.

At this bronchoscopy I had planned to treat him with radium in a special applicator which Dr. Robert Newell had prepared, but this was broken during the attempt to place it. Dr. Newell

From the Department of Medicine, Stanford University School of Medicine.

Dr. Robert E. Newell of the Department of Roentgenology devised the radium carrier and supervised its application. He also gave help and encouragement throughout. Dr. David A. Wood of the Department of Pathology gave untiring cooperation. My son, Dr. Robert E. Pierson, made the drawing.

1. Türck, L.: Klinik der Krankheiten des Kehlkopfes und der Luftröhre, Vienna, W. Braumüller, 1866.
2. Langhans: Primärer Krebs der Trachea und Bronchien, Virchows Arch. f. path. Anat. **53**: 470, 1871.

rebuilt the radium carrier, and on November 6 I placed it in the trachea in the region of the residual tumor. X-ray films were made with the tip of the forceps held at the distal margin of the tumor and the bronchoscope held at the proximal border; then the placement of the radium was checked with films according to these. The patient coughed the radium out after three and one-half hours.

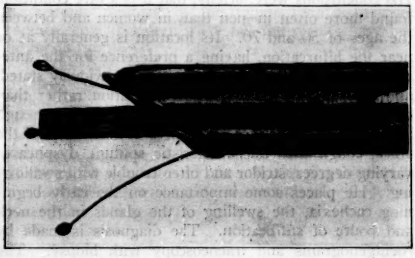

Fig. 3.—Radium applicator partly protruding from the bronchoscope.

On November 27 radium was placed similarly, but the applicator was broken against the bronchoscope in trying to readjust its placement; it was retained for about one-half hour. On December 19, by means of a new applicator, radium was placed again, everything going smoothly because the patient was well sedated, and was successfully retained for five hours, as planned.

The radium was in four tubes, each containing 25 mg., set with 12, 16 and 12 mm. spacings down the axis of the trachea. Allowing for crossfire, the calculated total dosage November 6 to December 19 amounted to about 5,000 roentgens at a radial distance of 8 mm. and about one-half that at a radial distance of 12 mm.

Since treatment the patient's tracheal condition has been studied in April 1942 and in January and November 1943, and at all of these times there has been no evidence of any abnormality except possibly a little thinning of the mucous membrane in the area occupied by the tumor. On physical and x-ray examination there was no evidence of any increase in the mediastinal glands. The patient's general health is excellent; he walks considerable distances and lectures without any shortness of breath or cough. He shortly regained his normal weight and has maintained it.

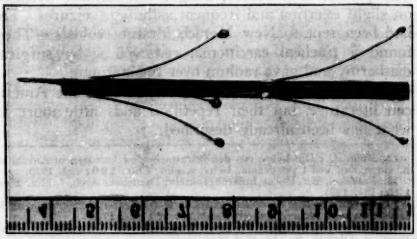

Fig. 4.—To show size of applicator.

SUMMARY

A man of 61 who had intermittent bouts of severe cough, dyspnea, suffocation and moderate hemoptyses for three years was found to have a primary adenocarcinoma of the trachea. An attempt to prove the histogenic origin from aberrant thyroid by the use of radioactive iodine was unsuccessful. After removal of as much as possible of the tumor through the bronchoscope, the remnant was treated by radium applied within the trachea. Two years after treatment there are no subjective or objective evidences of tumor.

COMMENT

In 1890, reported in 1898, von Bruns [3] operated on a patient aged 31 in whom dyspnea had been present for ten years. The tumor he found apparently had arisen from thyroid tissue. It was his feeling "that thyroid tissue might be present in the trachea (1) from aberrant thyroid tissue in the germ or (2) that it could penetrate from outside into the trachea between the tracheal rings during extrauterine life. This can happen only if there is a growing together of the thyroid gland and trachea, established by an embryological disorder of development of the thyroid capsule which is missing there, allowing the glandular tissue to proceed directly into the perichondrium." His operation removed the trachea over a distance of ten rings and also the anterior surface of the esophagus. A tracheal tube was put in place and the patient was comfortable until stenosis again occurred and he died, six years after the first operation. This is apparently the first operation for the complete removal of a primary carcinoma

Fig. 5.—Radium applicator in trachea, bronchoscope being withdrawn.

of the trachea. He also felt that in two thirds of the reported cases the tumor was in the upper and middle thirds of the trachea and that very rarely did a carcinoma there metastasize or invade the surrounding tissues.

In 1908 Nager [4] reported that in observations made at the Pathological Institute at Basel, Switzerland, between 1871 and 1905 in 1,078 cases of carcinoma the thirteenth in frequency were 19 cases of carcinoma of the lungs and bronchi and twenty-second were 9 cases of carcinoma of the larynx, and no cases involving the trachea were found. He reported a case in which a squamous cell carcinoma measuring 3 by 3.5 by 2 cm. was present just above the right main bronchus, and he states that this location near the bifurcation is favored for tumors and diverticula because this is the region where the separation of the "anlage" of the lungs and the foregut starts.

3. von Bruns, P.: Resection der Trachea bei primärem Trachealkrebs, Beitr. z. klin. Chir. **21**: 284, 1898.
4. Nager, F. R.: Ueber das primäre Tracheal-Carcinoma, Arch. f. Laryng. **20**: 275, 1908.

In 1909 Schmigelow,[5] reviewing the literature, found that von Bruns had collected 28 cases of primary carcinoma of the trachea, and he added 12 more from the literature and a case of his own, in which he had done a tracheal resection, the patient being well six years after the operation.

In 1911 Simmel [6] reported the occurrence of difficulty in swallowing, cough, fetid expectoration, hoarseness (paresis of both vocal cords), hemoptysis and cachexia in a man aged 77. Esophageal "probing" located a resistance 25 cm. from the teeth, and this was thought to be due to a carcinoma of the esophagus perforating into the trachea. At postmortem a primary carcinoma of the trachea was found, with the esophageal lining intact, the tumor extending from just below the cricoid cartilage to a few centimeters above the bifurcation, producing a diverticulum of the trachea.

By 1913 von Bruns [7] brought the number of reported cases of primary carcinoma of the trachea up to 81 and an additional 174 cases of benign tumors of the trachea, making the ratio of malignant to benign tumors of the trachea about 1:2. To this figure of 81 Heymann [8] added 33 cases from the literature and 1 of his own. After two attempts to remove the tumor completely by tracheoscopy had failed, transverse resection of the trachea was performed by Gluck and the patient was well two years later.

In 1915 Soerensen [9] reported another case of "aberrant retrotracheal goiter showing cancerous degeneration and growth into the trachea from behind." The patient was well two years after transverse resection of the trachea. He strongly recommended resection of the trachea because (1) other methods of operation were insufficient, (2) it was relatively not dangerous, even in total removals, and (3) the functional effects were good if the recurrent nerve could be preserved. He felt that it was contraindicated if the bifurcation itself was involved by the tumor or if the vessels in the neck were grown together. Growing together of the esophagus and trachea would not exclude, *ipso facto*, the possibility of operation.

According to Chiari,[10] primary carcinomas are the most frequent tumors of the trachea and occur more often in men between the ages of 50 and 60. They generally form broadly sessile tumors with globular or knobby surfaces, sometimes extending over several rings, but seldom are they pedunculated, and rarely do they infiltrate deeply below the surface, at least not until a considerable time has elapsed. They may eventually extend into the mediastinum, esophagus or thyroid gland. Secondary carcinoma may develop from cancer in the larynx, or it may be from the esophagus, bronchus or thyroid. Very rarely is it metastatic in the trachea from any distant focus. He too feels that radical intratracheal extirpation is rarely successful and that the operation of choice is radical transverse resection of the trachea.

Feichtinger [11] proceeded with his operation in two stages: first a tracheotomy for full exploration of the extent of the tumor and later transverse resection.

Otto Maier [12] removed a papillary cystadenoma in his case by a deep tracheotomy and then extirpation of the tumor by "bisecting the trachea downward," suturing its walls together after the removal of the tumor.

The largest group observed by one person up to 1921 was by Fraenkel,[13] who carefully studied 8 cases. His conclusions were, briefly, that it is a rare condition, found more often in men than in women and between the ages of 50 and 70. Its location is generally at or near the bifurcation, having a preference for the anterior and not for the posterior wall, as previously stated, and its shape is that of a flat infiltration rather than of a globular tumor. The general symptoms, although not pathognomonic, are hoarseness or a debility of the voice, cough with uncharacteristic sputum, dyspnea of varying degrees, stridor and often trouble with swallowing. He places some importance on the early beginning cachexia, the swelling of the glands in the neck and bouts of suffocation. The diagnosis is made by roentgenograms and tracheoscopy with biopsy. The course of the disease varies from three months to two years. In his experience death results from the extension of the disease into the surrounding tissues. He feels that the origin of the tumors is chiefly from the epithelium of the mucous glands and only rarely from the pavement epithelium.

Stenström [14] apparently agrees with Fraenkel in regard to the extension of the tumor to the mediastinum, for in 13 of 19 cases it had infiltrated the mediastinum, and only 6 were completely confined to the trachea.

Between 1925 and 1933 a few cases were reported by Borries,[15] Soerensen,[16] Hart and Mayer,[17] Holmgren,[18] Minnigerode,[19] Wolfgang Tiling [20] and Teubner.[21] The extreme rarity of the disease is statistically presented by Holmgren and Wolfgang Tiling.

In 1926 Adam [22] reported 4 cases of tracheal tumor, 2 epitheliomas, 1 soft fibroma and 1 endothelioma. He treated the first 2 with radium, but death occurred within six months.

The patient observed by Bowing and Vinson [23] had been ill three and one-half years with frequent colds, hemoptyses, slight fever, cough, considerable dyspnea on slight exertion and frequent asthmatic seizures. He had been sent to New Mexico for tuberculosis. They found a tracheal carcinoma, removed it by surgical diathermy and gave radium over the sternum.

A few other cases have been reported in the American literature, but their repetition adds little more to what has been already described.

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SUMMARY

The American and foreign literature disclose the fact that primary carcinoma of the trachea is a very uncommon disease. With increasing use of endoscopy its presence may be recognized more frequently. Operative procedures, such as removal of a portion of the trachea, have been carried out with varying success. Endoscopic removal of the tumor with x-rays and radium have also been used, but the results have been disappointing.

In the case reported as much as possible of the primary adenocarcinoma of the trachea was removed endoscopically and then intratracheal radium was applied.

Radioactive iodine was used to determine whether any normal or hyperplastic thyroid tissue was present in the tumor.

The patient is well, subjectively and objectively, two years after treatment.

490 Post Street.

THE DERMATOLOGIC ASPECTS OF THE VESICANT WAR GASES

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Of 27,111 hospital admissions due to use of poisonous mustard gas during World War I, 30 per cent showed involvement of the skin. This figure is significant and indicates to us, as dermatologists, the necessity of a greater familiarity with this relatively unknown field of war medicine.

Lewisite, one of the arsenical group of gases, is another type of vesicant agent that has been developed since the close of the last war. This discussion will consider experimentation and clinical observations that I have made on the mode of action of these two gases, mustard and lewisite, on human subjects.

MUSTARD GAS

Mustard gas is an aliphatic sulfur compound which in the pure state is a colorless, odorless, moderately volatile liquid whose density is 5.5 times that of air, having a boiling point of 217 C. and a freezing point of 14 C. The plant product, whose formula is bis-beta dichlorodiethyl sulfide $(Cl.CH_2.CH_2)_2S$., is used on the field. This is a thick dark brown to black oil characterized by a pungent garlic odor. Owing to its low vapor pressure it may form a persistent heavy mist that remains in the atmosphere for a considerable period after discharge. It is sparingly soluble in water but soluble in organic solvents and organic fats. Oilskin, rubber and cellophane offer some resistance to this synthetic product; ordinary dry clothing and leather afford slight protection, and wet apparel practically none.

Mustard gas acts on the respiratory system and the eyes unless a man is masked; then its chief action is on the skin. There is no pain or irritation on immediate contact with the skin. In a vapor exposure, absorption takes place coincident with the exposure of the skin to the vapors. No mustard gas remains on the skin surface after the exposure is over. In a liquid contamination only a small portion of the mustard gas is absorbed by the skin, as the vast majority of the gas evaporates into the air unless it is removed by other means.

This agent enters the cuticle presumably by absorption through the epidermis and by penetration of the glandular orifices and hair follicles of the skin surface. The rate and degree of penetration are influenced by such factors as local keratinization, epidermal thickness, supply of gland appendages and variations in the amounts of sweat and sebum present on the glaborious skin. Complete and irreparable damage of cellular tissue takes place within ten to fifteen minutes after liquid contamination of the skin. Most of the mustard gas becomes fixed in the epidermis, while the remainder which is free is transmitted, via the circulation, to various organs of the body.

The exact mechanism involved in the production of vesication and burn by mustard gas is not definitely established. It is the general consensus that the effects of mustard gas are due to a combination of the entire mustard gas molecule with cellular tissue. Precisely what substance or substances of skin the mustard gas combines with is as yet undetermined. However, it is believed to be some protoplasmic protein vital to cell life, perhaps a portion of one of the enzymatic systems.

Mustard gas is insidious in its action. Both the liquid and the vapor are nonirritating to the skin and give no warning. Disabling concentrations of mustard gas vapor may have so little odor that one is not aware of the danger. Likewise, liquid contaminations of the skin or clothing may go unnoticed.

There is a latent period between the time of exposure and the onset of signs and symptoms. This period varies from several hours to several days. Generally, the greater the degree of contamination, the shorter will be the latent period and the greater will be the injury produced. Early skin changes are often preceded or accompanied by nausea or vomiting coupled with a feeling of general exhaustion. In severe exposures these symptoms appear within two or three hours after the initial exposure.

In mild vapor exposures and small liquid splashes, only the exposed skin surfaces are affected. In extensive liquid splashes or more severe vapor exposures there is permeation and penetration of the clothing with the general involvement of the covered portions of the skin. Warm, moist areas of the body are the sites of predilection for mustard vapors: face, neck, axillas, antecubital fossae, groin, genitalia and perineum.

The earliest change in the skin is an erythematous blush often appearing first on the neck, shoulders, arms and legs. Within a few hours there is a generalized bright erythema. The patient presents the appearance of severe sunburn. Bands of normal white skin, which have been protected by thick shoulder straps of an undershirt or the cross belt of a gas mask, streak through these areas of bright erythema.

The appearance of the erythema may be the patient's first indication that he has been burned. There is mild pruritus and prickling of the skin at this time, which increases in severity as the erythema reaches its height. Discomfort becomes more pronounced in the flexural surfaces over the antecubital fossae, neck and popliteal spaces. The skin feels hot and the body temperature may rise to 100 to 102 F.

A generalized brawny edema develops early in this erythematous stage, which is accentuated in severe cases. It may be a superficial edema involving the epidermis or a deep pitting subcutaneous edema. On the extremi-

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ties, evidence of edema may remain long after the skin itself has returned to normal. The penal and scrotal lesions are often the most severe part of the skin involvement. The scrotum may become the size of a large grapefruit.

Within six to twelve hours, groups of multiple pinpoint vesicles appear. These vesicles soon coalesce to form blebs and bullae of varying size. At times the vesication resembles "crape rubber" or it may assume a ring shape like that of a doughnut.

There is progressive involvement of the skin during the first six to eight days. Pain and discomfort likewise increase in intensity. Sleep is difficult to obtain for the patient despite massive doses of sedatives. By the end of the first week the erythema, vesication and general discomfort reach their peak and begin to subside. Many portions of the skin become raw and denuded. There is weeping, oozing and maceration of some areas followed by fissuring, cracking and superficial ulceration with subsequent crusting. This is particularly true of the flexural surfaces and the genitalia. Eventually the skin becomes dry and parched and assumes a brownish to purplish hue. This deepening of pigmentation continues for a number of days. Desquamation then ensues and continues over a prolonged period. Many portions of the dry epithelium come off in strips and casts much as it does in scarlet fever.

Where liquid mustard gas comes in direct contact with the skin a typical blister develops. The bulla is superficial, round to oval with a thin, translucent, tense roof, and has a glistening golden yellow appearance. Vesication takes place in the center of an erythematous base, so that there is a halo of erythema surrounding the fully developed bulla. There is a wide area of surrounding edema, its extent depending on the degree of burn. The involved area is many times the site of original contamination. In large liquid contaminations the doughnut type of bulla develops. Here one sees a central dull, dirty white area of superficial necrosis surrounded by a ring of vesicle formation of varying width. Here the reaction between mustard gas and the cellular tissue has been so rapid and immediately necrotizing as to prevent the intervening stage of vesicle formation. The vesicle fluid is golden yellow and freely flowing when the early bulla is incised. Later the fluid becomes gelatinous and cannot be aspirated with a large gage needle. The base of the exposed bulla is moist and hemorrhagic. The fluid of an intact bulla or vesicle is reabsorbed within a week.

Lesions, uncomplicated by infection, heal without scar formation. There is characteristically a residual pigmentation due to a melanoblastic stimulation of the basal cells, which requires a number of weeks for resolution. The average case requires a month's hospitalization, the more severe cases several months'.

LEWISITE

Lewisite, a nonmetallic alkyl derivative, was synthesized by the late Dr. Lee Lewis at the American University near the close of the last war.

This gas is as yet untried on the battlefield. The Germans employed ethyldichlorarsine, a similar but less effective arsenical vesicant, during World War I.

Lewisite (beta-chlorovinyl-dichlorarsine) is representative of a group of trivalent arsenical compounds whose vesicant action and highly toxic nature are of prime importance. In its pure state it is a colorless, highly refractive, volatile liquid with no odor. However, it is extremely irritating to the nasal mucosa, giving rise to coryza, accompanied by sneezing and lacrimation. The impure form used in the field is brownish black with the odor of geraniums. Lewisite boils at 190 C. and freezes at — 18 C. It is soluble in organic solvents and sparingly soluble in water. Hydrolysis by water or alkalis yields the corresponding hydroxide or oxide. The latter is one tenth as vesicant as lewisite and nontoxic when applied to the skin.

Liquid lewisite absorbed from the bare skin is capable of producing acute arsenical poisoning and death. From animal experiments it appears that 1 cc. of liquid lewisite absorbed from the skin would be fatal to man. Lewisite combines with certain chemical constituents within the cell. This reaction is reversible during the first few minutes but later becomes an irreversible reaction.

High concentrations of lewisite vapor produce mild vesication. Although lewisite vapor is less effective than that of mustard gas, liquid lewisite causes a more rapid, severe and deeper burn than liquid mustard gas. In contrast to the absence of any symptoms on contact of mustard gas with the skin, lewisite (liquid) produces an almost immediate stinging and burning sensation (ten to twelve seconds).

During the first fifteen to twenty minutes a dull dead white or grayish area appears at the site of contamination. Within several hours the involved site increases in size and there appears an urticaria-like wheal, with central lemon colored area surrounded by a peripheral erythema. This center later becomes blanched in color, with the skin orifices puckering to give the appearance of tanned pigskin. Within six to eight hours pinpoint areas of vesication appear. These gradually coalesce to form a bulla, which covers the entire area of erythema so that early in its formation the underlying erythema sometimes reflects through the bullous roof to give the effect of an iris-like bullous lesion. The peripheral erythema and edema that are characteristic of the mustard gas blister is lacking in the early lewisite burn but appears later. The base of the exposed lesion is exudative, hemorrhagic and raised above the level of the surrounding skin. There is a sharp demarcation between skin involved by the burn and the normal skin, in contrast to the mustard gas burn, in which there is a variable amount of involvement of the adjacent skin.

The lewisite bulla tends to be more opaque and more cloudy than that of mustard gas and may be more flaccid. The vesicle fluid was until recently considered vesicant and to contain sufficient amounts of arsenic to be toxic. I have been able to show both by quantitative chemical analyses and by clinical experiments that the fluid is nonirritant, nonvesicant and nontoxic. In these same experiments it was shown that the vesicle fluid contained only infinitesimal amounts of arsenic (0.001 to 0.002 mg. per cubic centimeter of fluid).

Resolution and healing of a lewisite blister take place in much the same fashion as that of the mustard gas blister. It has been thought by some observers to heal more rapidly than mustard gas burns, but I cannot assent to this opinion. Residual pigmentation in small lewisite burns is not as characteristic as in mustard gas but is often seen to occur in large burns. The lewisite lesion leaves a residual atrophic scar in healing more often than does mustard gas.

PATHOLOGY

A number of factors influence the physiologic action of the vesicants, such as the physical properties of the agent, as well as the concentration and duration of

exposure. The influence of climatic factors on the physiologic action and general cellular activity of the skin are clearly demonstrated in the instance of the vesicant agents. The entire reaction between cellular tissue and the agent is much accelerated by elevations of temperature and humidity. Doses of the vesicants which in the winter produce only a mild erythema result in the hot summer in a burn requiring several weeks to heal.

In the biopsies of mustard gas burns that I have studied the pathologic changes are practically confined to the epidermis. There is a vacuolar or hydropic disintegration of the cells with eventual rupture of the cell membrane. Spaces formed by the progressive liquefaction and disintegration of these cells becomes filled with fluid exudate to produce an intradermal vesicle. The base of this vesicle, which rests on the surface of the corium, presents an occasional remaining basal cell. The roof of the vesicle consists of an upper layer of epidermal cells that remain viable for a time and a lower layer of necrotic or disintegrating cells.

The vesicle contains a homogeneous or fibrillar eosinophilic staining fluid in which there are a few polymorphonuclear leukocytes. Some of the hair follicles appear necrotic for a short distance from the surface, but there are no significant changes of the sebaceous glands, sweat ducts or sweat glands. There is some edema of the superficial corium with capillary dilatation and perivascular edema and mild perivascular infiltration of lymphocytes and polymorphonuclear cells.

In lewisite there is an early complete necrosis of the entire epidermis. This necrotic process extends into the corium, where there is manifest vascular damage and polymorphonuclear infiltration. Vesicle formation is intradermal as in mustard gas lesions, but beneath the vesicle roof there is attached the entire thickness of the necrotic epidermal layer. The pathologic changes in the lewisite lesion are in contrast to the slowly progressive hydropic disintegration confined to the epidermal layer that is seen in mustard gas lesions.

Vesicant burns, while in many respects analogous to those produced by heat and chemicals, offer certain contrasting features. The vesicants do not produce the immediate coagulation necrosis that occurs with thermal, electric and other chemical burns. Again only minute amounts of the agent are necessary to produce severe cellular destruction. Latency, recrudescence and a delayed period of development are peculiar to vesicant burns. With mild contamination, especially of mustard gas vapor, the skin may show no evidence of burn for as long as two to six days after the original contamination when erythema appears. This is an extreme example of the latent period. A vesicant lesion which appears to be properly healing under treatment may show a flare of reactivity ten to fourteen days after the original burn has been inflicted. Such a recrudescence of the burn is usually a papuloerythematous type of eczematous dermatitis occurring about the periphery of the healing burn, which may or may not be associated with vesiculation. Vesicant burns, especially when large portions of the skin are involved, often do not show their maximum involvement for a period of one to several days or more after the patient has presented himself for treatment. Areas of skin which twenty-four hours after the original contamination still appear normal may at a later date become involved, and lesions already present may increase in severity. This clinical observation of the delayed development of vesicant burns is substantiated by pathologic findings. Microscopically there is a prolonged period involved in the development of complete cellular necrosis.

Vesicles have been observed to occur in the old healed scar of vesicant lesions weeks to months after the burn has entirely healed. This phenomenon, at least in my experience, does not occur in thermal burns.

Sensitivity tests performed with very high mustard gas dilutions show the light complexioned to react to a greater degree than the dark skinned or colored individual. However, with sufficiently large exposures these differences disappear. Repeated exposure or burn with mustard gas is capable of producing sensitization to the agent. In a person who has developed this sensitization, an amount of mustard gas sufficient to produce a small burn on the normal skin will result in a very large burn on the sensitive skin. This phenomenon of sensitization from repeated exposures to mustard gas has also been demonstrated by experiments on the pig's skin.

True allergic states have been observed in persons working with mustard gas. In these individuals a fresh mustard gas burn on a previously unburned site of the skin will produce a vesicular reaction at a distant healed site of a mustard gas burn received years previously. These people will also respond to a generalized vapor exposure in a similar fashion. Allergic reactions due to lewisite have been known to occur but are rare.

There is danger of arsenical poisoning from the absorption of lewisite following severe burns, while small mustard gas burns are free from accompanying toxic manifestations. With large areas of skin involved in mustard gas burns, however, there develops a generalized toxemia, hemoconcentration and the other associated signs of shock.

TREATMENT

The emergency prophylactic treatment of vesicant contaminations is the responsibility of the individual soldier. The physician is chiefly concerned with treatment of the burn.

In severe cases the treatment of shock and toxemia is of primary importance. In the mild erythematovesicular cases treatment is the same as that for any acute generalized erythema, i. e. bland lotions and ointments, baths, seditation and so on.

The definitive treatment of vesicant burns differs but little from that usually employed for thermal burns. One may choose almost any of the generally accepted technics of burn treatment which one may prefer.

It has been my experience as well as the experience of others working in this field that the healing time of vesicant lesions is not greatly influenced by the type of therapeutic agent employed except for a few notable exceptions. I have employed ten day occlusive dressings on a large number of burns with a resulting increase of ten days in the healing time as compared with open dressings regardless of the therapeutic agent used in either instance.

The healing time of blisters which were incised and drained was compared with the healing time in blisters which were left intact. There was no difference found in the healing time. However, drainage of the vesicle fluid does give relief to the patient. Amyl salicylate, which in common with other salicylates possesses analgesic properties, has been recommended during the first five or six days of treatment. This is a saturated solution used in the form of a wet dressing. I have employed it in experimental burns of 3 inches diameter.

I have found it to have some analgesic effect in the acute stage, but it does not shorten healing time. Sulfanilamide crystalline powder and sulfonamide ointments appear to have no advantage over a boric acid ointment dressing in the small localized lesions. Workers are in general agreement that escharotics give poor results in vesicant lesions.

There is one major difference between vesicant and thermal burns which must be kept in mind, and that is the delayed period required for the full development of the vesicant lesion. Therapeutic measures and clinical prognosis must in some instances be guided by this fact.

ABSTRACT OF DISCUSSION

COMMANDER ROBERT L. GILMAN (MC), U.S.N.R.: If war gases are never utilized in the present war it will be due in no inconsiderable measure to the Chemical Warfare and allied services, which, in association with civilians and service physicians, have worked so thoroughly on antigas defense, as well as shared in the development of these modern implements of offense. There are certain features in the action of vesicant gases, as pointed out by Major Davis, such as the short but definite period between exposure and the beginning of skin irritation, and the latency or refractory period (in mustard gas) before symptoms appear that dictate to a large extent the measures used in prophylaxis, decontamination and treatment. The clinical and histologic observations of the author and others have been instrumental in outlining rational therapeutic procedures. An additional consideration is concerned with lewisite, and that is that its severity of reaction is due largely more to the contact with the skin of minute liquid droplets than actual gaseous vaporization. This difference in contact and the arsenical content make this gas capable of more severe skin burns as well as toxic systemic effects. We have certain protective devices and prophylactic measures and they are all designed to put an impenetrable curtain between the gas and the man or material. These include protective clothing, ointments and covering material. The latter are protective only in a relative manner. Once material or equipment has been contaminated, considerable effort must ensue if complete salvage is to be obtained. Prophylaxis merges directly into decontamination, which in turn is the first step in treatment. Solvents and soap and water have been mentioned. Action must take place promptly and oftentimes with only the means at hand, such as a thorough dousing or flushing with sea water. The treatment and management in this war will follow proportionally our advantages gained since the last war in the treatment of shock, fluid loss, severe dermatitis and burns. These constitute the major effects of the vesicants, and in the last war these "burn cases" (as they were termed) were treated similarly to any other type of burn casualty. Men were cradled under heat lamps, their beds screened with mosquito netting, while a variety of applications were used locally, ranging from bland ointments to antiseptics, and the use of a variety of "burn specifics." The moderately burned did well, while the severely burned often died of concurrent pneumonia, sepsis or shock. I believe that any future vesicant gas casualties will be treated exactly as we do those of shock or thermal burns at present.

DR. CHARLES C. DENNIE, Kansas City, Mo.: I was a mustard gas officer in the last war. We saw hundreds of cases of mustard gas burns of all degrees of severity. The thing that impressed me most was the fact that these men did not die from mustard gas—only a small percentage of them. Of course, it took them from twenty-four to seventy-two hours to arrive at our hospital, and the ones who were going to die probably died before that time. They manifested all degrees of burns, and about 10 per cent of the total number of casualties were severe burns. The thing that struck me most forcibly was the gelatinous material that was secreted beneath the giant vesicles. Some of these were blebs; some were as much as a foot long and 8 inches wide and would cover both thighs and the buttocks. Most of the casualties occurred during July and August, when the weather was hot and when there was dense humidity in the air. A great many of these men wore defective gas masks and they got an interstitial keratitis, which took much longer to cure than an original gas burn. They had all the manifestations of interstitial keratitis of syphilitic origin, including photophobia. They also, when they had defective gas masks, developed a severe burn of the upper respiratory tract in such a manner that they coughed up membranes a great deal like diphtheritic membranes, and in a few cases diphtheria was a complication. In treatment, we used only transfusions in those days; such a thing as using serum or plasma was unknown. Yet these men whom I saw, 12 of them in that first group of cases, lost much plasma but did not die from plasma loss. With the large vesicles we could take the gloved hand and throw the plasma off on the ground. In those cases the plasma had to be removed. We didn't know what to do with them, so we washed them with salt water and then we found after a little experimentation that the thing that gave the most ease was 2 per cent sodium bicarbonate in petrolatum.

DR. LEON GOLDMAN, Cincinnati: The remarks of some one who has had practical experience in this field are a lot more important than those of us who work in the experimental laboratory or had just a lot of library experience. One of the points that Major Davis brought up in his paper was the fact that a molecular intact mustard agent can be isolated from the lower layers of the skin and also found in the blood vessels away from the skin lesion. This is rather important for us who work in civilian dermatology because the principles of the study of these penetrating, persistent, equally strong irritant and sensitizing agents can be carried over into experimental work in civilian dermatology. With what he has told us about mustard gas and with the remarks of Dr. Cowdry a few days ago on the dynamic morphologic anatomy of the skin, we can really find out the fate of many of our contact agents in the skin. I should like to ask Major Davis if he has had any experience with cross sensitization between mustard gas and the less irritant but much more dangerous systemic agents, the so-called nitrogen mustards. From my work I can substantiate the findings of Major Davis and also of Sulzberger and Katz that the lewisite blister fluid is not irritant to the skin and also the roof over the lewisite blister is certainly not dangerous to the skin and contains little, if any, arsenic. I am curious to know what happens to 30 plus arsenic which has been deposited in the skin from lewisite agent. I have tried to find it by sulfide staining technics and am certainly not satisfied. Another point is the observation of Major Davis about the late appearance of vesicles in old scars, which I do not believe has been noted before in contact dermatitis. I have seen this phenomenon in old burns, especially in old stasis scars and in postoperative breast amputation scars, but there I have assumed that these fluid collections were due to mechanical trauma. I wonder if Major Davis can say anything about the value of protective ointments in the immediate emergency. All of us are concerned about whether there are such things as true protective ointments, as for instance in industrial dermatology. I should like to ask Major Davis too if he can say something of his important work in the field of antiarsenical agents as related to lewisite poisoning, since many dermatologists are concerned with arsenical reactions.

DR. C. GUY LANE, Boston: I have seen a few research workers with mustard gas and a few who are developing gas proof fabrics. One of these workers showed an interesting feature. She was working in front of a hood, where the fan was not turned on. The manager of the plant was beside her and another worker on the other side of her. She was handling some mustard gas just in front of her. She came to me about a week later with a mustard gas burn on the lower part of the abdomen, involving the pubic region and inner thighs, which was quite disturbing for several weeks. Curiously enough, on the lower part of the abdomen it was easy to see the markings of her girdle, where the gas had apparently penetrated. She was perfectly unconscious of anything going on at the time. It is important for workers to follow absolutely directions about protection. It is also important for them not to use too strong a solution to neutralize the mustard gas. There were several cases in a group that thought that because the routine strength of the neutralizing agent was good a stronger solution would

be much better. Their manifestations did not suggest mustard gas and disappeared when the solutions were used in normal strength.

MAJOR MARION I. JEFF DAVIS, M. C., A. U. S.: The soldier is supplied with two types of prophylaxis against vesicant agents. One is used as a prophylactic against the mustard gas agent and there is also one used as a prophylactic against lewisite burns. These are ointments. They have to be applied rapidly after contamination. If they are applied within a few minutes after contamination they work well particularly in the case of lewisite. This prophylactic agent for lewisite has a specific action and is capable of reversing the lewisite reaction with the cellular tissue up to a given time after contamination. The principle involved in this ointment and its formula are not divulged; however, it has now been distributed to several clinics throughout the country; the active principle is being used in the treatment of toxic arsenical reactions. Severe arsenical dermatitides have been treated with this agent successfully. It is put up in the form of an intramuscular injection and used as an injection four times a day during the first day and once daily thereafter for the next five days. The reports have been received that this agent has actually saved patients' lives who have developed severe arsenical dermatitis which otherwise would probably have resulted in death. The investigative work included in this paper brings out perhaps one important feature: the need for a great deal of further work in burns. The pathology of burns, the mechanism of vesiculation and the therapy of burns are fields in which the dermatologist has an opportunity to contribute his share.

METABOLIC CRANIOPATHY

A CLINICAL AND ROENTGENOLOGIC STUDY OF SO-CALLED HYPEROSTOSIS FRONTALIS INTERNA

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Metabolic craniopathy has been defined as "a syndrome characterized clinically by variable and protean manifestations of a metabolic, endocrine and neuropsychiatric nature and roentgenologically by characteristic thickening of the internal tables of the skull." [1] The condition has been commonly referred to as hyperostosis frontalis interna, but this is a less suitable designation since the changes observed in the skull do not appear to contribute to the clinical picture nor are they probably an essential part of the syndrome. The changes in the skull are moreover not always limited to the frontal bones, and hence the designation metabolic craniopathy would appear preferable. Other designations which have been used for certain forms of this disorder are the eponyms Morgagni's and Stewart-Morel's syndrome and the terms "cranial hyperostosis of the insane" and "calvarial hyperostosis." These too fit the condition less satisfactorily, however, than does the designation metabolic craniopathy.

Although metabolic craniopathy is a relatively common condition, found in about 1 to 2 per cent of all patients admitted to hospitals, it is only since 1928 that the condition has been recognized as a clinical entity. In that year Stewart [2] described 5 patients with unusual clinical features who at autopsy were found to have hyperostosis of the skull. He drew attention to the association of mental symptoms and obesity with the observed localized cranial hyperostosis. Moore's [3] survey of 6,650 x-ray films of the skull clarified the roentgenologic aspects of the disorder, established criteria for its diagnosis and clarified the confusing roentgenographic findings in the several types of cranial exostoses, puerperal osteophytes and senile hyperostosis and established our present concept of the pathognomonic bone changes in metabolic craniopathy as seen on x-ray examinations. Since Stewart's publication,[2] over 100 cases have been reported in the world literature.

CLINICAL MATERIAL AND METHODS

The present paper is based on a survey of the patients seen at the North Carolina Baptist Hospital. During the two and one-half year period between July 1941 and January 1944, approximately 1,620 examinations of the skull were carried out in the Department of Roentgenology for one cause or another. Of these, 78, or 4.1 per cent, revealed the presence of calvarial hyperostosis pathognomonic of metabolic craniopathy. Many of these patients were outpatients referred by physicians for x-ray study only and hence were not available for clinical study. In the vast majority of the cases an x-ray examination of the skull was requested because of unexplained headache. Disease of the sinuses and intracranial tumor were the disorders most often suspected by the referring physician. In less than 5 per cent of the cases was the true nature of the disorder suspected.

The clinical data presented in the present paper are based on an analysis of 40 patients in whom the diagnosis, as suggested by the history, physical examination and laboratory studies, was confirmed by the x-ray findings.[4] In addition 2 patients were encountered with clinical findings typical of the disorder but without the pathognomonic x-ray evidence of the characteristic hyperostosis. It is now generally conceded that the changes in the skull are merely one characteristic of the disease and need not be present. Nevertheless, the objective x-ray findings remain to date the most constant and reliable and the characteristic feature of the disorder.

INCIDENCE

As has already been noted, the incidence of calvarial hyperostoses in our series of x-ray films of the skull was 4.1 per cent. This is considerably higher than that reported by Moore [3] (1.2 per cent) but lower than that noted by Eldridge and Holm [5] (25 per cent) in patients admitted to an insane asylum.

The 42 patients whom we have studied clinically were encountered among a total of 4,200 individuals seen in the medical services of the North Carolina Baptist Hospital. The incidence of the disorder is thus approximately 1.0 per cent in a general hospital population. Metabolic craniopathy is thus far from being a rare condition.

AGE

The age distribution of our patients has been as follows: ages 20 to 29, 5; 30 to 39, 10; 40 to 49, 16; 50 to 59, 5; 60 to 69, 4. More than a third of the

From the Departments of Roentgenology and Internal Medicine of the Bowman Gray School of Medicine of Wake Forest College and the North Carolina Baptist Hospital.

1. Grollman, A.: Diseases of the Bones, in Christian, H. A., and Mackenzie, J.: Oxford Medicine, New York, Oxford University Press, 1943, vol. 4, chapter 2, pp. 405-502.
2. Stewart, R. M.: Localized Cranial Hyperostosis in the Insane, J. Neurol. & Psychopath. **8**: 321, 1928.
3. Moore, S.: Hyperostosis Frontalis Interna, Surg., Gynec. & Obst. **61**: 345, 1935; Metabolic Craniopathy, Am. J. Roentgenol. **35**: 30, 1936; Calvarial Hyperostosis and the Accompanying Symptom Complex, Arch. Neurol. & Psychiat. **35**: 975 (May) 1936.
4. Drs. Wingate M. Johnson, Elbert MacMillan and R. L. McMillan gave us permission to study and include 4 of their patients in this series.
5. Eldridge, W. W., and Holm, G. A.: The Incidence of Hyperostosis Frontalis Interna in Female Patients Admitted to a Mental Hospital, Am. J. Roentgenol. **43**: 356, 1940.

patients were thus in the fifth decade of life when they first presented themselves for diagnosis, although in most cases the symptoms had been present for many years. The youngest of our patients was aged 21. The disease apparently, judging from the history, has a slow and insidious onset and probably begins in early life. The youngest patient on record in whom hyperostosis was evidenced in the x-ray film was aged 7, and in 5 of our own cases the changes in the skull were pronounced before the age of 30. In most cases, however, the condition is a disorder of middle life.

SEX

The condition, as has been pointed out by all previous observers, is predominantly one affecting the female sex. Only 1 of our patients was a man. This compares with the results of previous observers,[6] who also found that 97 to 98 per cent of the patients were women. The 1 male patient in our series was a 33 year old salesman who complained of trembling, nervousness, insomnia, periodic attacks of blindness and generalized weakness. Physical examination was entirely negative except for bilateral megalomastia, which, according to the patient, was a familial characteristic shared by several other male members of his family.

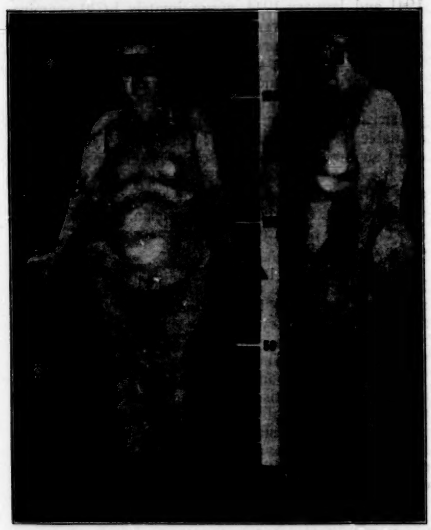

Fig. 1.—A 49 year old patient showing the typical obesity of metabolic craniopathy. The principal symptom of complaint was intractable headache. Note the megalomastia and rhizomelic type of obesity often erroneously referred to as "pituitary obesity."

HEREDITY

Metabolic craniopathy frequently affects several members of the same family, being inherited as a dominant character.[7] The family history of a number of our patients suggested the existence of the disorder in their relatives. In one instance the x-ray examination of the skull of a paternal uncle (an inmate of a mental asylum) of one of our patients revealed the existence of the disease.

SYMPTOMATOLOGY

The symptoms of metabolic craniopathy are protean and variable. They consist of metabolic, endocrine, hypertensive and neuropsychiatric manifestations. Although only one of these general groups of symptoms may be predominant in any individual case, there are usually manifestations of at least two or more of them. In our series of 42 patients, 14 showed manifestations of neuropsychiatric, metabolic and endocrine dysfunction. In 13 the neuropsychiatric manifestations alone were outstanding. In 8 a combination of neuropsychiatric and metabolic abnormalities were predominant. In 5 cases neuropsychiatric and endocrine disturbances were outstanding. In the remaining 2 cases the changes in the skull were merely an incidental finding, and it was only on requestioning that evidence of neuropsychiatric manifestations was elicited. One of these patients was brought to the hospital by hypertensive cardiovascular disease and chronic nephritis, where she died of uremia. The hyperostosis of the other patient was discovered incidentally during the study of a control series of 50 female patients in the fifth decade of life to determine the incidence of calvarial hyperostosis in the general hospital population. Her principal complaint was due to chronic cholecystitis.

Metabolic Disturbances.—The principal metabolic disturbance noted in this condition is obesity. This was observed in 23 of the 42 cases covered in this report. The obesity is usually of the rhizomelic type with megalomastia, which has so frequently but without any rational basis been designated as the "pituitary" type of obesity (fig. 1).

Basal metabolic determinations varied in most cases within plus or minus 10 per cent of the normal. In only 2 cases did the basal metabolic rate deviate beyond these figures, being minus 15 per cent in 1 case and minus 18 per cent in another. There was no evidence of hypothyroidism in these cases.

The blood cholesterol, which was determined in 18 of the cases, was within normal limits (180 to 220 mg. per hundred cubic centimeters).

There was no evidence of any disturbance in the calcium and phosphorus metabolism. The blood levels of the serum calcium and inorganic phosphate were normal in the 26 instances in which these determinations were made.

Hyperglycemia is considered by Bartelheimer[8] as a symptom of hypophysial diabetes in hyperostosis frontalis interna, but in our series of patients this was encountered in only 3 instances. In 2 of these the glycosuria was mild and was controlled by dietary restriction. In the other 3 there was relative refractoriness to insulin, and large doses did not effectively control the hyperglycemia. In 12 other patients in whom obesity was a prominent symptom the dextrose tolerance did not differ from that observed in otherwise normal obese individuals.[9]

Endocrine Disturbances.—Approximately one half of all the patients in our series have manifested some disturbance usually attributed to the endocrine organs.

6. Grollman,[1] Eldridge and Holm.[5]
7. Knies, P. T., and LeFever, H. E.: Metabolic Craniopathy: Hyperostosis Frontalis Interna, Ann. Int. Med. **14**: 1858. Samson, M.; Caron, S., and Martin, C. A.: Syndrome d'hyperostose frontale interne a caractère familial, Laval méd. **7**: 140, 1942.
8. Bartelheimer, H.: Die hyperostosis frontalis interna als Symptom des hypophysären Diabetes, Deutsche med. Wchnschr. **65**: 1129, 1939.
9. Grollman, A.: Essentials of Endocrinology, Philadelphia, J. B. Lippincott Company, 1941.

The principal endocrine disturbances were related to the reproductive system, with abnormalities of menstruation not associated with any demonstrable pelvic disease. In 9 of the patients, amenorrhea was outspoken. The menarche usually occurred normally, but gradual cessation of the menses began at the age of 18 or 20 and in some instances the amenorrhea had continued over a period of many years.

Hirsutism (fig. 2) is the other prominent manifestation which we have encountered in 12 of the 42 cases. Since these symptoms are usually associated with obesity and hypertension, one can readily see how this condition might mistakenly be diagnosed as the Cushing syndrome. As a matter of fact this diagnosis had been made elsewhere in 2 of the cases in this series and in 1 case an exploration of the adrenals had been carried out.

Hypertension.—Hypertension identical to that seen in benign hypertensive cardiovascular disease has been observed in 16 of our 42 patients. This is a much higher frequency than one would expect if the hypertension was merely a coincidental occurrence, and we therefore believe that this represents another of the protean manifestations of the disease.

Neuropsychiatric Disturbances.—Neuropsychiatric manifestations constitute the most prevalent symptoms observed, being present in over three fourths of all patients. In 30 of our 42 patients a diagnosis of psychoneurosis had been made at some time during the patient's life.

The neuropsychiatric manifestations did not conform to any specific syndrome. This fact has also been noted by Eldridge and Holm,[8] who observed in their patients thirteen of the twenty-two types of psychosis recognized by the American Psychiatric Association. Schiff and Trelles [10] describe the neuropsychiatric disturbances observed in hyperostosis frontalis as consisting of (1) intellectual slowness with depression and anxiety, (2) disturbances of temperament and character and (3) protective neuroses. Personality changes, egocentricity, hypochondriasis, general nervousness and the other usual psychoneurotic manifestations are commonly observed. Easy fatigability, muscle weakness, dimness of vision, diplopia, dizziness (without any evidence of ocular disease) and subjective disturbances in gait and equilibrium are frequent complaints. Cranial nerve defects, narcolepsy, convulsive seizures, mental deterioration and dementia are less common manifestations.

Headache was a very common complaint, being present in 19 of the 42 patients of our series. It is commonly frontal but may be occipital or may be referred to the top of the head or to the nuchal area. In several cases the headache was disabling and was the principal complaint. The refractoriness of this headache to the usual methods of therapy is striking. In the more severe cases ergotamine tartrate, aminopyrine and the other usual preparations were found to be ineffective.

Major psychoses are common in patients suffering from metabolic craniopathy. Four of our patients had at some time required institutional confinement. These patients were suffering from depression.

Hysteria, with diverse manifestations, is frequently observed in metabolic craniopathy and was noted in 8 of our patients. In 1 the conversion hysteria was of the paralytic type, with hysterical paralysis and anesthesia of the left lower extremity. In 2 patients there were attacks of periodic blindness and in 2 periodic deafness, apparently hysterical in origin. One patient suffered from chronic attacks of jacksonian epilepsy. Another patient gave a history of a single acute attack of convulsions and coma lasting for several days. Somnolence was a symptom in 2 patients, dizziness and fainting spells in 3.

ROENTGENOLOGIC CONSIDERATIONS

We have found positive bone changes in the skull in 98 per cent of the patients in whom typical clinical symptoms were present. In practically every patient with the usual endocrine, metabolic and neuropsychiatric manifestations of the disease, pathognomonic bone changes in the vault can be demonstrated on the roentgenogram. The failure to see typical bone changes, however, does not exclude the possibility of the syndrome, as clinicians interested in this disease can with careful study arrive at a diagnosis in a small percentage of cases on the basis of clinical findings alone. There are also a certain number in whom typical x-ray changes are demonstrated and in whom subsequent clinical investigations fail to elicit the expected symptoms. We feel that in all probability these patients will in time develop clinical manifestations, but we have no proof of this nor do we know how soon after x-ray bone changes occur such manifestations will develop, since our observations have been over too short a period of time.

Fig. 2.—A 39 year old patient with metabolic craniopathy. Note the facial hirsutism often seen in this disorder. In addition the patient manifested the typical obesity, hysterical paralysis of the left leg, and amenorrhea of ten years' duration.

The characteristic x-ray changes consist essentially in the deposition of cancellous bone of great density on the inner table of the frontal bone (fig. 3). This formation consists of benign noninflammatory osseous tissue, affecting primarily the compact bone of the inner table. In a small percentage of cases it will later involve the diploe between the tables (fig. 4). In

10. Schiff, P., and Trelles, J. O.: Syndrome de Stewart-Morel (hyperostose frontale interne avec adipose et trouble mentaux) d'origine traumatique, Encéphale **24**: 768, 1931.

the majority of the cases the lesion is entirely limited to the squama frontalis, the condition which we recognize as typical hyperostosis frontalis interna. Occasionally there is involvement of the orbital plate of the frontal bone, the inner table of the parietal bone or, less commonly, the structures in the middle fossa at the base of the skull, especially the temporal or sphenoid bone and the bony structures of the hypophysial fossa (fig. 5). Diffuse calvarial hyperostosis involving the entire vault has been reported by Moore,[8] and Schiller [11] has reported extracalvarial bone changes in the mandibles. In none of our cases were changes demonstrated outside the calvarium. Knies and Lefever [7] feel that distinction between the various subgroups as outlined by Moore is somewhat arbitrary and that care must be exercised lest thought become more confused rather than simplified.

In none of our cases were remote hyperostotic bone changes unassociated with the characteristic changes of the frontal bone found in the vault. We feel that in all cases showing the classic x-ray appearance the inner table of the frontal bone is primarily involved and that in approximately 2 per cent of these lesions will be seen elsewhere in the vault. In all cases there is thickening and sclerosis of the inner table of the frontal bone, which, in some cases, may be as great as 3 to 5 cm. in thickness (fig. 6). The outer table is always spared and the external diameter of the calvarium is not altered. Usually the changes are bilateral and symmetrical. From these observations we may perhaps be justified in concluding that the x-ray evidence of metabolic craniopathy is hyperostosis frontalis interna and that changes remote from the frontal bone represent secondary variations of this primary change.

Fig. 3.—Posteroanterior and lateral appearance of the skull in a case of metabolic craniopathy showing the typical deposition of cancellous bone on the inner table of the frontal bone.

If this criterion is adhered to, the differential diagnosis of this syndrome from the hyperostoses associated with acromegaly, osteitis deformans, tuberculous and syphilitic osteomyelitis, leontiasis ossea, cranial osteoma, sarcoma, metastatic cancer, underlying hemispherical meningomasa and senile hyperostosis will become less difficult and this condition may be diagnosed with a high degree of accuracy on roentgenologic evidence alone.

11. Schiller, A.: Roentgen Diagnosis of Diseases of the Head, translated by F. P. Stocking, St. Louis, C. V. Mosby Company, 1918.

DIFFERENTIAL DIAGNOSIS

Because of the neuropsychiatric manifestations of metabolic craniopathy the condition is frequently diagnosed as "psychoneurosis."

The obesity, hypertension, hirsutism and amenorrhea often lead to the diagnosis of Cushing's syndrome. There should, however, be no cause for confusion between the two conditions, since patients with metabolic craniopathy lack many of the outstanding features of true Cushing's disease. One does not observe in metabolic craniopathy the osteopetrosis, acrocyanosis and purplish striae which are characteristic of Cushing's syndrome.[12] Moreover, the course of the disease in the two conditions is entirely different, being rapidly progressive in Cushing's syndrome and relatively chronic without rapid progression in metabolic craniopathy. Except for the hirsutism, there is no evidence of true masculinization in metabolic craniopathy. One does not find an enlargement of the clitoris or the masculine voice observed in most patients with androgenic tumors of the adrenal gland or with arrhenoblastoma.

The 17-ketosteroid content of the urine has been shown to be of considerable significance in the diagnosis of Cushing's syndrome and disorders of the adrenal cortex. It was thought, therefore, of interest to investigate the excretion of this steroid in the urine of patients suffering from metabolic craniopathy in whom amenorrhea and hirsutism were prominent features and in whom one might therefore suspect some abnormal androgenic activity of the adrenal cortex. In 10 patients on whom such studies were made the daily 17-ketosteroid excretion was 3 to 7 mg. This is entirely within the normal limit. Such determinations might be useful as an added laboratory aid in the differential diagnosis.

TREATMENT

Metabolic craniopathy is a progressive chronic disorder, the more severe cases terminating at times in actual dementia. The majority of the cases, however, show little progression, with long continued morbidity. In most of our patients, symptoms had been present over a period of from two to fifteen years.

Among the various forms of therapy which have been suggested are the administration of chondroitin, aminoacetic acid or anterior pituitary and irradiation of the pituitary-hypothalmic area. In our own experience no form of therapy has proved of any demonstrable permanent value, and any apparent beneficent effect has probably been the result of suggestion. In several of our patients in whom the pituitary-hypothalamic area was irradiated striking improvement has occurred, but in other cases this form of therapy has been of no apparent value. In most cases the obesity has been controlled by dietary restriction, but in many cases, even on a low caloric diet, loss in weight has been minimal.

COMMENT

It has been questioned whether hyperostosis frontalis interna represents a real clinical entity.[1] Because of the chronic nature of the disease, few of the patients have come to autopsy and hence there is lacking any

12. Grollman: Essentials of Endocrinology, pp. 82-85.

pathologic basis to which one might attribute the disorder. From a clinical standpoint we believe, however, that the disease does represent a definite entity, which when taken in conjunction with the specific roentgenologic findings may be differentiated as a distinct disease process.

Fig. 4.—Appearance of the skull in a case of metabolic craniopathy, showing the involvement of the diploe between the tables in addition to changes on the inner table of the frontal bone and wings of the sphenoid.

As regards the pathogenesis of the disorder, the nature of its symptoms would lead one to assume that the basic disorder is in the hypothalamic area of the brain. This portion of the diencephalon could give rise to the diverse symptomatology and protean manifestations which one observes in metabolic craniopathy.

Fig. 5.—A case of metabolic craniopathy with involvement of the inner table of the frontal bone, the structures of the middle fossa at the base of the skull, and the squamous portion of the temporal bone.

Further pathologic studies, however, are necessary before this hypothesis can be established.

In a few cases reported in the literature cerebral degeneration in the form of cortical atrophy has been demonstrated.[13] Although several authors have pointed to the endocrine features of the disease as evidence of an endocrinopathy being the basis for the disorder, there is no proof to support this view. In the 2 patients of our series who have come to autopsy no abnormalities of the pituitary, thyroid or adrenals could be demonstrated.

SUMMARY

1. A study was made of 42 patients suffering from metabolic craniopathy.

2. X-ray findings in 78 patients manifesting the disorder and in a control series of 50 patients were investigated in order to establish the roentgenologic basis for the diagnosis.

3. The 17-ketosteroid excretion in patients with metabolic craniopathy displaying metabolic and endocrine disturbances has been shown to be normal. In patients with similar symptoms which are due to adrenal cortical dysfunction, the 17-ketosteroid content of the urine is elevated.

4. Metabolic craniopathy is considered to be a definite clinical entity of relatively frequent occurrence.

Fig. 6.—Hyperostosis of the frontal bone and diploe, the new bone deposit being 4 cm. in thickness.

13. Moore, M. T.: The Morgagni-Stewart-Morel Syndrome: Report of a Case with Pneumoencephalographic Findings, Arch. Int. Med. **73**: 7 (Jan.) 1944.

Fluid Structures of the Body.—The fluid structures of the body consist of three parts, the blood, the intracellular fluid and the interstitial fluid, the sum total of which constitutes 70 per cent of the body mass. Of this, 5 per cent of the body weight (3.5 liters in a person of 70 Kg.) is circulating plasma, 50 per cent (35 liters) intracellular fluid and 15 per cent (10.5 liters) interstitial fluid. This last, which includes the lymph, is the most labile of the three, for in order to preserve intact the other two it must undergo a constant shift in amount and, to a less extent, in electrolyte content.—McLester, James S.: Nutrition and Diet in Health and Disease, Philadelphia, W. B. Saunders Company, 1943.

HYPERTENSION

THE EFFECT OF ACTIVITY, REST, NATURAL SLEEP, SODIUM AMYTAL, PENTOTHAL SODIUM, CHLORALOSE AND ETHER ON EXPERIMENTAL NEUROGENIC HYPERTENSION AND OF REST AND SODIUM AMYTAL AND ANESTHESIA ON HYPERTENSIVE PATIENTS

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CHARLES E. KERNODLE JR., M.D.
AND
HENRY C. HILL, M.S.
DURHAM, N. C.

Restriction of activity, extension of periods of rest and natural sleep, and generous use of sedatives are commonly employed in the medical treatment of hypertension. Splanchnicectomy (Peet,[1] Craig and Adson,[2] Smithwick[3] and others) or subtotal to total paravertebral sympathectomy, splanchnicectomy and celiac ganglionectomy (Grimson[4]) have been of value as occasional supplements to medical management. Selection of patients for surgery has proved difficult. The effect of rest and sodium amytal on hypertension determined by hourly blood pressure readings during twenty-four hours or more has been emphasized by many physicians as one of several important factors indicating the advisability of surgery.

Vasomotor instability evidenced by abnormal elevations of blood pressure during reflex or emotional stimulation has long been recognized in many patients and associated with the term "neurogenic hypertension." The function of the sympathetic nervous system in mediating such elevations of blood pressure and the important role of the carotid sinuses and cardioaortic depressor nerves in regulating blood pressure have been reviewed.[5] Heymans and Bouckaert[6] in 1931 presented the first of a series of studies demonstrating that elimination of the modulating function of the depressor nerves produces vasomotor instability and a persistent neurogenic hypertension in dogs. Similar studies by Koch and Mies,[7] Dautrebande,[8] Nowak and Walker,[9] Thomas and Warthin,[10] Grimson[11] and Schafer[12] have been reviewed.[5] Total sympathectomy effectively reduces experimental neurogenic hypertension. Splanchnicectomy alone does not. The fundamental observations of Goldblatt and his colleagues[13] in 1934 initiated an extensive investigation of renal factors in hypertension. These studies have afforded little encouragement for sympathectomy and have not yet produced a satisfactory therapeutic agent.

The nature of the hypertensive disease process present in many patients is obscure. We feel that elements of abnormal blood pressure regulation, abnormal renal function and vascular pathologic conditions, together with other factors as yet unknown, may all be present in many hypertensive patients in varying degrees. We also feel that in some patients faulty blood pressure regulation or a neurogenic element may be an initiating and a major perpetuating factor. The disturbed pressor depressor equilibrium of such patients would effect through the sympathetic nervous system an increase of peripheral resistance throughout the body. Subsequent vascular disease and renal humoral or metabolic change would also affect the entire vascular bed. Should medical management fail in hypertension of this variety, surgical intervention would be indicated. The effectiveness of sympathectomy should increase as it is extended from the original limited splanchnicectomies to include more or all of the body. A test that could determine the presence of a neurogenic element would be valuable.

Because of these several considerations we feel that this experimental study of the effect of activity, rest, sedation and anesthesia on experimental neurogenic hypertension in dogs is warranted.

ACTIVITY, REST AND NATURAL SLEEP

The technics conventionally employed for blood pressure determination in dogs require positioning and training and preclude determinations during normal emotional and physical activity, rest and natural sleep. We[14] have devised a technic that employs small sterile buried iliac and femoral cuffs and pressure sacs connected through fine plastic tubing to a pressure mercury and a recording water manometer. This technic permits pulse rate and mean systolic blood pressure determination at any desired moment without disturbing the animal. The average and the range of the blood pressures of 4 normal dogs were determined during varying stages of activity and during natural sleep. Two typical responses are represented in figure 1. The blood pressure and pulse average and range were elevated during activity and low during rest and natural sleep. Neurogenic hypertension was developed in 4 dogs by excision of the carotid sinuses and division of the vago-depressor-sympathetic trunk of one side and the depressor nerve of the opposite side. The blood pressure range and average of two of these dogs is represented in figure 2. It is evident that fluctuations of blood pressures during various stages of activity exceeded those observed in the normal dog. The blood pressures during rest and natural sleep of 3 of the 4 neurogenic hypertension dogs were lower than the active blood pressures but higher than similar pressures in the normal dogs (fig. 1). One of the 4 dogs (dog 2, fig. 2) had no reduction of the hypertension during

From the Department of Surgery, Duke University School of Medicine.
Read before the Section on Surgery, General and Abdominal, at the Ninety-Fourth Annual Session of the American Medical Association, Chicago, July 14, 1944.

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sleep. The pulse rates of the neurogenic hypertension dogs exceeded those of the controls and fluctuated more widely with variations of activity.

SODIUM AMYTAL AND PENTOTHAL SODIUM

The effect of sodium amytal on blood pressure was observed in 5 normal and 6 neurogenic hypertension dogs. The sodium amytal was given in divided doses during three or four hours in amounts averaging in all 0.2 Gm. per dog. This produced light sleep. The blood pressures were taken before and after the sodium amytal by direct arterial puncture. The positioning of the dog for arterial puncture after sodium amytal produced some restlessness. The neurogenic hypertension dogs employed had been prepared by elimination of the modulator or depressor nerves as described some three months before the experiment. The effect of the sedative on the blood pressure is illustrated in figure 3. An elevation occurred in 2 of the control animals, a lowering in 2 and no appreciable change in 2. An elevation occurred in 2 of the neurogenic hypertension dogs, a lowering in 3 and no change in 1.

The effect of pentothal sodium anesthesia was determined on 5 normal, 6 neurogenic hypertension and

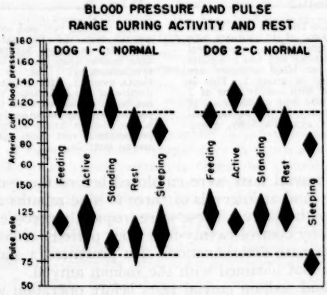

Fig. 1.—Blood pressure and pulse range of 2 normal dogs. The pressures were obtained by an arterial cuff technic without disturbing the animals. Some lowering of pressure occurred during rest and natural sleep.

7 renal hypertension dogs. The neurogenic hypertension had been developed three to eleven months before the experiment. The renal hypertension was produced by placing tight silk or linen capsules about both kidneys from one to eleven months before the experiment. Blood pressures were taken by arterial puncture during this period to familiarize each animal with the procedure. The last blood pressure was taken in a dark quiet room just before the experiment. Pentothal sodium in a 2.5 per cent solution was then introduced through the saphenous vein until the anesthesia was sufficient to prevent pain reflexes. A second arterial puncture was performed four to ten minutes after the induction to determine the blood pressure under anesthesia. Respiratory arrest and pronounced cyanosis occurred in certain dogs of the neurogenic hypertension group. These experiments were repeated until satisfactory respiration was maintained. The neurogenic hypertension animals required slightly more pentothal sodium for anesthesia than did the control or the renal hypertension groups. The effect of pentothal sodium anesthesia is illustrated in figure 3. The blood pressure rose in 2 of the control dogs and dropped in 3. It rose in 1 of the neurogenic hypertension group and dropped in 5. The final blood pressures of these 5 remained at definite hypertension levels. It rose in 3, dropped in 3 and remained unchanged in 1 of the renal hypertension animals.

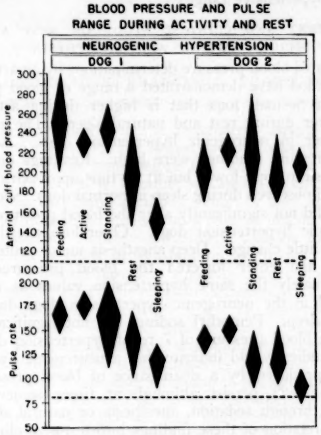

Fig. 2.—Blood pressure and pulse range of 2 of 4 neurogenic hypertension dogs. Dog 1 demonstrates the greatest lowering observed during natural sleep and dog 2 the least. The blood pressures of the neurogenic hypertension dogs during sleep did not reach the low values observed in the normal dogs (fig. 1).

CHLORALOSE AND ETHER ANESTHESIA

The effect of chloralose anesthesia on blood pressure was observed in 4 normal and 5 neurogenic hypertension dogs (fig. 4). The blood pressures were determined by arterial puncture before and after the intravenous administration of 0.08 to 0.1 Gm. of chloralose per kilogram of body weight. Some lowering of blood pressure occurred in 2 of the normal dogs and a

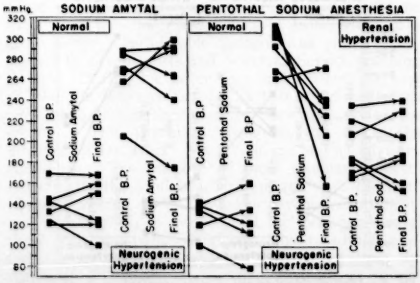

Fig. 3.—The effect of sodium amytal sedation on the blood pressure of 6 normal and 6 neurogenic hypertension dogs is demonstrated on the left. The effect of pentothal sodium anesthesia on 5 normal, 6 neurogenic and 7 renal hypertension dogs is represented on the right.

moderate elevation in 2. A lowering of blood pressure occurred in 1 of the neurogenic hypertension dogs, elevation in 2 and no change in 2.

The effect of ether anesthesia on blood pressure was determined in 4 normal and 4 neurogenic hypertension dogs. Arterial puncture blood pressures were taken

before and after the induction of a deep third plane ether anesthesia. Some lowering of blood pressure occurred in 1 and little change in 3 of the control dogs. The 4 neurogenic hypertension dogs demonstrated a definite lowering. The final blood pressures remained in the hypertensive range.

COMMENT AND CLINICAL STUDY ON REST AND SODIUM AMYTAL AND ANESTHESIA

Repeated blood pressure determinations by an arterial cuff method have demonstrated a range of blood pressures in normal dogs that is higher during activity and lower during rest and natural sleep. The range is greater in neurogenic hypertension dogs. Active blood pressure readings were high. Readings during natural sleep were lower but at no time approached the low level observed during sleep in normal dogs. Sodium amytal did not significantly alter the blood pressures of neurogenic hypertension dogs. Chloralose anesthesia effected little change. Deep anesthesia under pentothal sodium and ether lowered the blood pressures to approximately the same hypertension values as were observed in the neurogenic hypertension dogs during natural sleep. Pentothal sodium did not significantly alter the blood pressure of 7 renal hypertension dogs. These studies would indicate that a neurogenic hypertension produced by a disturbance of blood pressure regulation will persist although at times somewhat reduced through sedation, anesthesia or natural sleep.

Interpretation of these findings into terms of clinical hypertension must be done with reservation. It seems well established that clinical hypertension is effected by an increase of the peripheral resistance. Components of disturbed blood pressure regulation or neurogenic hypertension, pathologic change, particularly arteriolar sclerosis, or renal circulatory change altering metabolism or producing a renal pressor substance may play varying roles in affecting the increase of peripheral resistance. The experiments would suggest that rest, natural sleep, sedation or anesthesia may moderately lower the blood pressure of a neurogenic hypertension. They also suggest that a neurogenic hypertension may

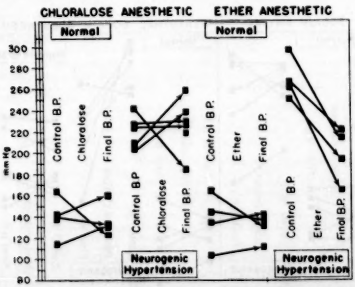

Fig. 4.—Effect of chloralose and of ether anesthesia on the blood pressure of normal and of neurogenic hypertension dogs.

persist under these conditions and that a negative rest and sodium amytal test may not eliminate the possibility that an element of a neurogenic nature may be present.

Rest and sodium amytal tests aid medical evaluation of the hypertensive patient. The importance of the sodium amytal test in the clinical evaluation of a patient should not, however, be overemphasized. This is illustrated by a review of the test as employed on the first 20 patients treated by paravertebral sympathectomy. This procedure, although limited somewhat by anatomic variations and by nerve regeneration, accomplishes sympathetic denervation of most of the peripheral vascular bed throughout the body. Rest and

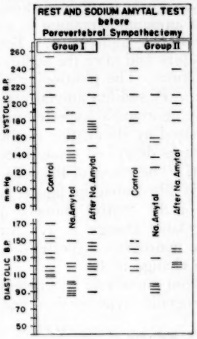

Fig. 5.—The rest and sodium amytal tests of 10 patients who were treated by paravertebral sympathectomy and had a definite lowering of blood pressure are represented in group I. This is contrasted with similar tests of 5 patients who had no lowering of blood pressure in the supine position after sympathectomy, group II.

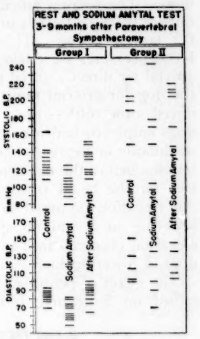

Fig. 6.—The rest and sodium amytal tests of the patients illustrated in figure 5 three to nine months after paravertebral sympathectomy. The 10 patients, group I, with definite reduction of blood pressure could not be differentiated from the 5 patients with no reduction in the supine position, group II, by the preoperative rest and sodium amytal tests (fig. 5).

sodium amytal tests were employed before the sympathectomy and at intervals of three to nine months after the sympathectomy. These were frequently preceded or followed by control twenty-four hour periods of hourly blood pressure determinations that presented a similar curve to that obtained with the sodium amytal.

Rest and sodium amytal tests before operation were separately plotted and then shuffled. Four observers attempted a prediction of which patient would be benefited by sympathectomy and failed. The rest and sodium amytal tests three to nine months after sympathectomy were then examined. Ten patients were selected as showing by the postoperative rest and sodium amytal test an appreciable lowering of the supine blood pressure. Five patients were selected as showing by this test alone no change in the supine blood pressure. Three patients with intermediate results, 1 with a polycythemia vera and another with a Cushing's syndrome were discarded. The preoperative tests of the 10 patients that later showed appreciable lowering of blood pressure are illustrated as group I in figure 5 and compared with the preoperative tests of the 5 patients that later had no lowering of blood pressure, group II. It was impossible to determine by the tests which patients would receive benefit from surgery. Figure 6 represents the rest and sodium amytal tests of the same groups of patients three to nine months after sympathectomy.

The effect of anesthesia was determined from the anesthetist's record of the first operation of these 15 patients. Ethylene or ethylene-ether anesthesia was employed. The blood pressure rose after anesthesia and before operation in 12 patients, remained the same in 2 and decreased slightly in 1. No difference existed between groups.

CONCLUSION

Experimentally and clinically the blood pressure altering effect of rest, sedation or anesthesia has been found variable. Etiologic assumption or surgical prognosis based principally on rest and sodium amytal or anesthesia tests may be misleading. The blood pressure lowering effect of these tests clinically should be but one of many factors considered in the evaluation of the hypertensive patient.

ABSTRACT OF DISCUSSION

DR. GEZA DE TAKATS, Chicago: The significant experimental findings of Grimson and his associates indicate that the neurogenic hypertension in the dog does not respond remarkably to the customary use of barbiturates or sleep, which are so frequently employed in selecting patients for sympathectomy. The neurogenic hypertension of the dog, produced by section of the buffer nerves, may not be identical with the essential hypertension in man. There is good evidence that the buffer nerves are intact in essential hypertension. In my own series the best results with splanchnic nerve section have been obtained in young or middle aged women who have had toxemia of pregnancy or eclampsia, thus an organic vascular disease affecting among others the renal parenchyma. In this group, which consists of an internist, an ophthalmologist and a surgeon, a three day schedule is being used for a preoperative study of the hypertensive patient. As Dr. Grimson stated, the sodium amytal test is not always conclusive. We have had certain cases that indicated through the carbon dioxide pressor test whether the central mechanism is active or not. A patient with a late grade 3 hypertension who showed on biopsy a late benign renal sclerosis gave a slight response to the carbon dioxide pressor test. On the other hand, a younger patient with other tests showing early grade 1 hypertension with considerable vasomotor activity gave an exaggerated response to carbon dioxide. The block of the paravertebral sympathetics as a preoperative test, just like high spinal anesthesia, cannot be a good test for operability, since it is especially apt to cause a definite drop in blood pressure in the older, sclerotic group by causing a sudden failure in venous return. In face of these difficulties the lack of pronounced organic changes and fall in blood pressure to a minimum requirement of 150 systolic, 100 diastolic after rest or sedation still remain the safest criteria for operability.

DR. EMMET B. BAY, Chicago: Dr. Grimson's work in both animals and man has great validity. Any single test is obviously a precarious thing on which to base one's judgment with respect to indications for operation. The sodium amytal test may be largely left out of our armamentarium because some of Dr. Grimson's patients had negative sodium amytal tests and yet had very good response to the operation. It leaves us, however, in great difficulty. The surgical procedure is a major one. We would like to employ it for younger people in whom there was no serious organic change in the precapillary arterioles or in the kidneys. We, as internists, don't like to suggest an operation to patients when we know that so many of these cases have a relatively benign course for so many years. We should like to pick out those in whom the course is going to be a malignant one, pick them out early and attempt to correct this situation before serious irreversible damage has been done. This procedure was, wisely, first used only on elderly patients for the most part who were doomed to die unless something was done about it in a very short time. The fact that as many of them received some improvement as did indicates that it should be included in our thinking about the treatment of hypertension still, but we all hope that those who are working on the physiology of this common disease will find some method of management that will lead to improved care for this large number of patients.

DR. KEITH S. GRIMSON, Durham, N. C.: One impression that Dr. de Takats' report has unintentionally given might be corrected. He demonstrated an outline for a three day preoperative evaluation of the hypertensive patient. Actually many patients should be evaluated in the hospital for three weeks or more before surgical treatment should be considered.

PSYCHIATRIC SELECTION OF MEN FOR THE ARMED FORCES

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The importance of the psychiatric aspects in the selection of men for the armed services was recognized by psychiatrists long before the onset of the present war. In 1918 it became so apparent to General Pershing that better methods should be used in screening out those individuals who would be unable to make a satisfactory military adjustment that he cabled to the Chief of Staff in Washington as follows: "Prevalence of mental disorders suggests urgent importance of intensive efforts in eliminating mentally unfit from organization of new draft prior to departure from United States." During the last war attempts were made to screen all recruits at mobilization centers. In some centers most of the recruits were seen by psychiatrists with adequate screening in the light of psychiatric knowledge at that time. In other centers no psychiatric examination was made or it was most unsatisfactory. In a considerable number of instances rejection was recommended by the neuropsychiatric examiner but the recommendation was overruled by the line officer or command surgeon. At the same time the number of neuropsychiatric casualties in the last war was great (41,646) and the postwar problem of care has been stupendous, the total cost of $30,000 to $35,000 per man being greater than for any other single group of casualties.

In the summer of 1940 when it was apparent that we were likely to be involved in the present conflict, Dr. Winfred Overholser wrote a detailed and excellent summary of the problem to President Roosevelt, calling attention to the need for the establishment of an adequate psychiatric screening program which could be used when the time came for rapid mobilization of a large army. Considerable thought was given to the subject by psychiatrists and Selective Service planning groups. During the latter part of 1940 and the first of 1941 the Selective Service System established plans and began holding seminars in various parts of the country. This psychiatric program was under the direction of Dr. Harry Stack Sullivan and an advisory committee. The purpose of these seminars was to indoctrinate the local board physicians with the need of and a method of recognition of psychiatric problems and to help them to weed out at the local board level those registrants who would be unable to adjust satisfactorily to the military service. At that time the American Psychiatric Association, through its special committee appointed to deal with wartime problems, was aiding in the development of plans for psychiatric examinations of prospective members of the armed forces.

In several states plans were developed to secure information which would aid in the proper psychiatric selection of recruits. Through cooperation of the

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Selective Service System, the Army and the Navy, and with the advice from representatives from the American Psychiatric Association, military psychiatric standards were established. These standards if followed were presumed to cause the rejection of those who would likely fail in military service. The tendency was to reject all persons who showed any evidence of psychiatric disorder. That this attitude has changed is evidenced by War Department Technical Bulletin TB MED 33, which says in part "There is accumulating evidence that many individuals with minor personality deviations and mild neurotic trends can be of service in the armed forces. It is believed that, on the basis of previous directives, many such men are now being rejected at induction stations on neuropsychiatric grounds. The acute need for manpower makes it necessary to admit all individuals to serve in the armed forces who have a reasonable chance of adjusting to such service. The neuropsychiatric study should be made on a longitudinal basis and not on a cross section. The Medical Survey Program was developed by Selective Service to make just such a longitudinal survey possible.

In the present conflict the size of the armed forces is far larger than that of the last war. The forces have been built up to this size in approximately three years. Psychiatric selection, which requires more time than physical selection, has been seriously hampered by this extraordinarily rapid mobilization.

The problem of selection from a psychiatric standpoint is of course to recognize those men who by the nature of their personality makeup will not be able to adjust satisfactorily in the armed forces. It was necessary, with no historical data, to prognosticate the future mental health of these individuals rather than to make the diagnosis of a disease process. Psychiatrists, no matter how well trained, were not prepared for this type of function.

Most of the psychiatrists at induction stations are civilian psychiatarists, and most of those who are in the armed forces have been commissioned out of civil life. These men have an inadequate understanding of the needs of the armed forces, even though they may have a fair idea of the stress to which servicemen may be subjected. As in other fields of endeavor there are both exceptionally well qualified psychiatrists and those who are poorly qualified. By virtue of the amount of work to be done and the shortage of men to do it, all available psychiatrists have been employed. It is perfectly obvious to many of us that some psychiatrists are doing an inadequate and unsatisfactory examination, especially at the induction stations. To quote further from TB MED 33 "Thus, a neuropsychiatric examination consisting of a few leading and suggestive questions such as 'Do you worry?' 'Are you nervous?' or 'Do you have headaches or stomach trouble?' is inadequate, and positive answers to such questions are not in themselves justifiable cause for rejection. Isolated signs, such as nail biting, slight tremor or vasomotor symptoms, are not disqualifying. Normal concern over the prospect of induction, as manifested by moderately moist palms or tenseness, should not be regarded as evidence of an incapacitating disorder. Rejection for neuropsychiatric reasons should be made only in those cases in which the history and examination clearly indicate the existence in the past and/or present of a personality disorder of partially or completely incapacitating degree." These poorly done examinations have in some cases resulted in the rejection of men who should have been accepted, as well as the acceptance of many who should have been rejected. Much criticism of psychiatric rejections has been expressed by Selective Service board officials, by the Army officials and by the public. Some of this criticism is valid, but most of it is unjustified and has been the result of misunderstanding of the meaning of psychiatric rejection and of the seriousness of psychiatric casualties. In many instances this criticism can be considered a psychologic defense and projection mechanism on the part of the person offering it.

At the present time research is being carried on to develop what might be called a military personality profile. Psychiatric screening has been done on the basis of presumption of psychiatric disorders or indications of the possibility of its development not on the basis of established criteria or exact measurements as is true in the physical study. Therefore the more experienced and capable the psychiatrist making the examination and, within certain limits, the greater the amount of time allotted him, the more accurate will be his prediction as to the inductee's success or failure in the armed forces. It is hoped that, with the greater knowledge of the personality characteristics which lead to failure in the armed forces and of those which spell success, psychiatric selection will become progressively more accurate.

At the present time our job is not only to recognize the manifest cases of psychiatric disorder and those who are apt to develop a psychiatric disorder as a result of the stress of military life but also to select those individuals who will be unable to adapt themselves satisfactorily to military life. This includes the mentally deficient, the inept and the psychotic, as well as those with neurotic characteristics. It should be emphasized that persons with certain types of mild neurosis may do well in the armed forces. Service may resolve the basic conflict. Recognition of the psychopathic personality group is important because, although these individuals may not actually develop a serious psychiatric illness in the armed services, yet by virtue of their inability to adjust they may serve as a focus of infection of bad morale, which in turn may result in breaks in discipline and lead to disaster. This is typified in the description of a situation told by an Army officer who at one time had been placed in charge of a unit with a reputation for bad discipline, which under two or three previous commanding officers had become progressively worse. This man, instead of initiating his command by establishing rigid discipline, carefully observed the unit for a week and then picked out three men who, although they did not have any psychiatric deviations obvious to a lay person, did have psychopathic personalities. These men were discharged, and the unit almost over night changed from one with a very bad reputation to one with high morale.

Those individuals who present psychiatric problems in the service might be considered in four categories or groups. The first group would include those who are manifestly unfit for service and whose disability is obvious or becomes so during the course of a brief psychiatric examination. Such individuals are easily detected and account for a fairly large percentage of the neuropsychiatric rejections at induction stations. The second group are those who are questionably fit but with whom a more complete historical background, the need of observation or both is necessary in order to evaluate their fitness accurately. The historical

information obtained through the Medical Survey Program is particularly important in the selection of this group. In the naval service until the present, these cases have been detected at the naval training station or boot camps, where, after a period of observation and trial duty, the lack of fitness is demonstrated. The third group includes those who are potentially unfit but who may be able to adjust reasonably well for an indefinite but relatively short period of time. These men adjust well until the degree of stress becomes sufficiently severe to produce symptoms. They are separated from the service only after hospitalization study and medical survey. In the future large numbers of these should be detected by the historical information made available by the Medical Survey Program. The adjustment of these individuals usually becomes strained after the first six months. The peak period of discharge of these individuals occurs within the first twelve months of service. Finally, the fourth group would include those who, according to the best possible tests and the highest standards of psychiatric fitness, including an adequate historical background, appear to be normal, well integrated individuals. Not until such persons are confronted with the greater than normal stress of actual combat or prolonged operational duties do they manifest evidence of functional disability. It does not seem likely that any procedure can be set up which will accurately determine which individuals going through induction stations would break down provided they are in this fourth group.

At the present time the procedure for the selection is divided into two parts, the first phase being before the prospective service man reaches the induction station. Following registration, and if the registrant reports any difficulty which makes it apparent to the board that he might not be able to pass the induction station examination, he may be referred to a physician for examination either at the board's request or at his own request, or he may be referred to an advisory board for special examination. At the time of registration or, if registered, when he is considered for the reclassification which will lead to his induction, a survey is made of his previous social, medical and school history. This material is prepared by various regularly constituted individuals at the local board level on special forms for transmittal to the induction station. This survey, which is called the Medical Survey Program, was developed by the Selective Service System in conjunction with the Surgeon General's Office of the Army and Navy. Important procedures in the program are carried out by the use of certain forms.

Form 210 is designed to establish the identity of the individual in reference to treatment for mental illness. If this treatament has been in a state hospital, the registrant is disqualified at the local board level.

Form 212 carries medical and social history so arranged that the examiner at the induction station can determine at a glance the presence of positive or negative information of value. In case important information is available and is so noted by the checking of one of the questions, it is inscribed on the reverse of the form. This form is completed by a special field worker known as the medical field agent.

Form 213 is a composite report from five teachers so arranged that any consistent deviation from the normal will be called to the attention of the examiner by merely glancing at the composite form. This form is to be used for boys from 15 to 18 years of age at the time they leave school for any reason other than transfer to another school.

Form 214 is to be used to obtain information about school adjustment when it is necessary to get this information from school records.

Only form 210 is to be used as the basis for rejection, and this should be carried out at the local board level. The other forms have information for the induction station psychiatrist and should give him important leads as to possible reasons for rejection or induction. Such procedures have been in use in several parts of the country over a period of many months. The program was established as a national program in October 1943. It is so designed as to give the examining physicians at the induction station the maximum amount of information about each registrant with the minimum amount of time necessary to utilize this information. As first constituted the Medical Survey Program was very comprehensive in its coverage of various factors relating to the adjustment of the individual. As is so frequently true in the development of any plan of this scope, some changes were necessary to suit particular problems in various parts of the country in order to yield a maximum of utilization with a minimum of difficulty. As the machinery of the plan has been developed, various changes have been made and will continue to be made in order to reach the highest degree of efficiency possible. Universal coverage of men forwarded has not yet been achieved but is constantly on the increase. It should be the responsibility of every psychiatrist, military or civil, to assist in this program in order that the aim of best possible selection may be achieved as soon as possible.

The second phase might be considered that which occurs at the induction station and during the early period of the registrant's military career. The induction station psychiatric examination is difficult. A number of factors tend to militate against a completely successful psychiatric study. First and foremost among these factors is the time element. While a reasonably good judgment can be based on a study of ten to fifteen minutes, in many instances so many have had to be examined that the time allotted to each may be reduced to one or two minutes per individual. Without other information, such an examination can be only of very superficial value. Second, not all examiners are of equal competence. Asking such questions of the selectee as "Do you worry?" or "Do you have stomach trouble?" and observing certain minor signs as mild vasomotor instability, mild tenseness results in an almost worse than useless psychiatric examination, and yet frequently this kind of an examination is the basis on which a man is rejected or accepted. It should be apparent that a justifiable rejection can be based only on a longitudinal study of the individual. It most certainly should not be based on an all too brief cross section examination of the individual at the moment of his induction station examination. To quote further from TB MED 33, "Information and time are oftentimes inadequate to establish accurate diagnoses. In many instances the symptomatology and/or behavior may make disqualification of the registrant necessary, although not sufficiently well crystallized to warrant the diagnosis of a clinical disease entity. To label a registrant with a diagnostic term in so brief an examination, without adequate data available, is unscientific, and unfair to the individual. Each clinical diagnosis as given in MR 1-9 will be based on adequate historical and examinational evidence. In those instances where insufficient

data are available to arrive at a diagnosis and where it is the neuropsychiatrist's opinion that the registrant is not acceptable, he will indicate that the individual is disqualified as 'not suited for military service.'"

In some sections of the country the induction stations are using an autobiographic social survey. This consists of a questionnaire which is given each registrant at the induction station and which he is to complete by the time he reaches the psychiatrist. Since the psychiatrist is usually last or next to last in the examining line, the registrant has ample opportunity for filling out the form during the course of his other examinations. This form has proved of considerable value in selection, but difficulties arise in connection with its use. In certain instances the individual refuses to put down all the information required or records inaccurate information, which at times may be misleading. This form cannot be used by illiterates. Some of the registrants tend to consider the psychiatric examination as a joke or to be very much frightened by it. Those reactions are in themselves a valuable index of the registrant's personality makeup. This plan, where used, supplements the information obtained by the Medical Survey Program.

There are important social implications involved in the examination of men for the armed forces. To many men who failed to be selected for service, this failure represents a threat to their self esteem and self confidence. This is particularly true with regard to certain types of psychoneurosis. A significant factor in the readjustment of the individual in his community is the fact that he frequently carried back with him a label which connotes maladjustment, the label being the result of a diagnosis made on the basis of a very brief examination. This diagnosis may make it more difficult for him to adjust to his home situation, for him to meet his associates if they know of his diagnosis, and for him to obtain reemployment or to return to his previous occupation.

There has been an unfortunately wide misinterpretation of the meaning of psychiatric rejection. Too many individuals have assumed that a neuropsychiatric rejection or a neuropsychiatric discharge from the armed forces signifies that the individual involved is "crazy." Even the rejectee involved may assume this to be the case. One person rejected for psychoneurosis looked the term up in the dictionary and found also the term psychosis, confused the terms, and both the patient and his family became extremely anxious for fear that within the near future it would become necessary for him to be committed to a state hospital. Whether this misinterpretation is wilful or the result of lack of understanding of the problem is not nearly so important as is the great harm which is done to those in the rejected group. It should be a part of our responsibility as psychiatrists and neurologists to clarify the issue whenever opportunity arises. Such clarification requires the development of better community understanding of psychiatric situations in general and of the psychiatric problem of the service man in particular. Education of the community concerning the role of psychiatry in war and in peace is urgently needed. In some respects psychiatry has been oversold; our need is to face the problems of community understanding squarely.

In a report of the first year's experience of the Information and Counseling Service at the Milwaukee Induction Station made by Miss Dorothy Paull, it is stated that "after a year of experimentation and observation we are more convinced than ever that the public has no realization of the extent of emotional and mental illness in its midst or of the lack of resources to cope with it. Many young men are carrying on a tragic and lonely struggle attempting to make good against terrific odds of environment and unhealthy mental habits and family pattern." This is a clear and succinct statement of an important problem. With the information being developed under the Medical Survey Program the background for reeducation of the public and for a better understanding of the problem of psychiatric disabilities can be developed. This ought to be particularly useful when demobilization day comes. With the mass of information which will be available and which will remain confidential, those who are qualified to utilize it should be able to make a very real contribution to the better adjustment of our people.

Certain factors have been high lighted by our experiences in the psychiatric selection of men for the armed forces. The most important is perhaps the demonstration of such an alarming amount of mental ill health in our communities. The need for a more comprehensive mental hygiene program is obvious. It is our responsibility to provide and facilitate this program. The material available through the Medical Survey Program and through our experience at induction stations and in the armed forces, if properly analyzed, will serve as sign posts on the road leading to a better understanding of public needs and be put to excellent use by business, industry and the professions.

ABSTRACT OF DISCUSSION

Dr. Hans Deutsch, Chicago: In these last three and one-half years I have gone through the difficulties which confront the psychiatrist in selecting men for military service. The first apparent difficulty was the lack of indoctrination before induction, and therefore the men manifested a lack of receptivity toward military discipline. Another important factor which might interfere with the obedience of a man joining the armed forces was negativism. From the start I favored the term "unsuitability" and instructing the man as well as the public that it is no reflection on the personality when a man is disqualified. Of prime importance is it to look at the man and his conduct during examination, and then if necessary look at the history. What we need are facilities for disposal of the man; not a rejection or acceptance but to decide where to put the man either in civilian or in military life. In that way we would not have so many men hesitant to join the armed forces or appeal for induction reexamination.

Colonel Leonard G. Rowntree, M. C., A. U. S.: In the thirteen million records to date we have had more than four million rejections. In addition to this we have many hundred thousand dischargees. We apparently have a problem facing us in the nation of lack of physical and mental fitness that has never been suspected. Selective Service has attempted to deal with this problem in many different ways. We have been very fortunate in securing as adviser in this program Dr. Raymond W. Waggoner. We have provided for changes in this program when the need becomes apparent. We have requested the National Research Council to set up a committee consisting of Dr. Overholser, Colonel Menninger, in charge of the Psychiatric Service of the United States Army, and Commander Braceland of the United States Navy. They have studied this program to date. They are permitted to recommend changes, if changes become desirable. We have developed what we consider to be the best possible system for the gathering of information of medical, social and educational histories on each registrant and have presented it in its present form for the aid of the psychiatrist at the induction stations. The Medical Survey Program has been set up in response to a request from the Secretary of War to General Hershey, saying that a system of assistance must be developed in this field. I would request that all who have to do with examinations utilize the material col-

lected to the utmost. The problem has been in effect only six months. Most of our difficulties have been surmounted. The program has advanced far beyond what I believed was possible for any program of this magnitude in the short time it has been in existence. If you have suggestions for change, make them to the committee referred to or to Dr. Waggoner. All suggestions will be given serious consideration. In the meantime, I believe that if you will use this plan you will find that it fills a real need. The system should become more valuable as time passes.

DR. RAYMOND W. WAGGONER, Ann Arbor, Mich.: There have been many difficulties with those who were charged with the execution of the program and quite as many difficulties among those charged with its use. Perhaps this is the most serious problem. Many of us may feel that it is evidence of our inability to do a good job to have to rely on assistance such as that furnished by the Medical Survey Program. No one can deny that a good medical-social history is of great importance in making a prognostication concerning the future mental health of the individual. A question has just been handed in asking whether there are any data as to how we compare as a nation with respect to the occurrence of neuropsychiatric casualties with other nations, particularly Germany and Italy. I am not in possession of information necessary to answer the question.

PSYCHOSOMATIC RELATIONSHIP TO GASTROINTESTINAL DISEASES

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AND
S. ZACHARY ORGEL, M.D.
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The early twentieth century witnessed the ascendancy of the therapeutic nihilism of Osler. It had been preceded and influenced by a structural concept of disease derived from the precise pathologic investigations of Virchow. These autopsy studies had stressed abnormal cellular findings and centered the activity of medical students in the morgue.

The rebellion from the concept that disease is a fixed pathologic state was led by the modern psychologists. Their investigations of the psyche emphasized the role of the personality in the expression of disease. It is largely the result of these studies that has terminated the independent development of internal medicine and clinical psychiatry. No longer should a patient be treated only in terms of his specific complaints. A careful survey is made of the sick man from the standpoint of his personality as well as his organic disturbances. This new approach, which has as its basis the recognition and acceptance of the interdependence of the psyche and the soma, is known as psychosomatics.

The gastrointestinal tract is the primary battleground for the conflicts between the psyche and the soma. Here is the site for many primitive gratifications and abuses, adjustments and accommodations. These concepts have long been recognized but are only now being translated into a dynamic plan of treatment. Until now the results in the treatment of the functional disorders of the gastrointestinal tract have been largely unsatisfactory. Since these so-called functional cases represent more than a majority of all those seen in a gastrointestinal clinic or in private practice, the large percentage of failures in this group is a challenge. To meet this challenge the gastroenterologist must approach the psychotherapeutic problem with the same precise skill that he employs in establishing a physical diagnosis.

Read before the Section on Gastroenterology and Proctology at the Ninety-Fourth Annual Session of the American Medical Association, Chicago, June 14, 1944.

Our purpose in this paper is to correlate and emphasize clinical experience dealing with:

1. The recognition of the origins and mechanisms of some gastrointestinal symptoms.
2. The exposition of basic principles of psychosomatic therapy.

In our studies we have arbitrarily divided our patients into two categories. The first group consists of those in whom no organic gastrointestinal disease can be demonstrated. Various clinics [1] have estimated that this so-called functional group represents from 50 to 75 per cent of all patients. The second group consists of those patients with true organic disease in whom concomitant psychologic disturbances complicate, mask or interfere with the treatment of their organic disease. No accurate estimate has been made of the percentage this group represents.

Irrespective of the type of case, it becomes essential to investigate not only the physical components but the psychosomatic factors as well. The first step in this direction, which is best taken after the diagnosis of physical disease has been established or proved absent, is the taking of the psychosomatic history.

PSYCHOSOMATIC HISTORY AND DIAGNOSIS

The fundamental cause of psychosomatic illness is the emotional immaturity of the adult. It is this lack of emotional stability that occasions the conflict between the intellect and the emotions, which in turn creates the disharmony conducive to ill health. By treating the individual and not his gastrointestinal tract, the physician will attempt the reeducation of the emotions which is the psychotherapeutic goal.

Felix Deutsch [2] and others have stressed the skilful guiding of the patient's discussion of himself as a medical case and as a human being. The physician must give the patient sufficient time to tell his story in his own way. Two important objectives are thus gained: first, the cathartic value to the patient by the recitation of his difficulties and, second, the establishment of the patient's confidence through the demonstration of sincere interest by the physician. The ideal method seems to be one of casual conversation, utilizing free association and careful questioning. Only as the physician gains the patient's confidence can he learn of the past struggles and the conscious present anxieties of the patient's life situation in regard to family, friends and business.

Dunbar [3] suggests that the following important diagnostic points be obtained from the history: 1. "A picture of the patient's life in which his major environmental stresses are outlined, together with his psychological and physiological reaction to them." 2. A picture of the patient's characteristic reaction pattern in terms of the environment and emotional situation to which he has adjusted with ease or difficulty, again in relation to illness history. 3. The topics he tends to avoid and misrepresent, and the topics that are accompanied by an increase or decrease in his skeletal or vegetative response and by temporary increase or relief of his symptoms. Type of defense used by the patient—whether he will try to keep his anxieties to himself or seek relief in action, as for example fidgeting or walking

1. Eusterman, G. B.: Diagnostic Aspects of Roentgenologically Negative Gastric Disorders, J. A. M. A. **107**: 1432 (Oct. 31) 1936. McLester, J. S.: Psychic and Emotional Factors in Their Relation to Disorders of the Digestive Tract, ibid. **89**: 1019 (Sept. 24) 1927. Menninger, W. C.: Am. J. Digest. Dis. & Nutrition **4**: 447, 1937. Robinson, G. C., and Paulson, M.: Rev. Gastroenterol. **6**: 454, 1939; Sullivan, A. J.: Am. J. Digest. Dis. & Nutrition **5**: 484, 1938. Weiss, E., and English, O. S.: Psychosomatic Medicine, Philadelphia, W. B. Saunders Company, 1943.
2. Deutsch, F.: Psychoanalyt. Quart. **8**: 354, 1939.
3. Dunbar, H. F.: Psychosomatic Diagnosis, New York, Paul B. Hoeber, Inc., 1943.

up and down the room, or seek relief in smoking or talking about his symptoms. Attention should be paid to hesitancy, crying, laughing, evasion, tenseness and an increase or decrease of symptoms. 4. Dreams and other indications of the unconscious, especially divergences between dream material and the patient's statements may be of value. This presumes adequate special training on the part of the physician in the interpretation of this material.

The review of the psychosomatic history should enable the physician to make a diagnosis of the personality disorder. The psychopathologic basis of the specific personality disorder then becomes clear and permits an exact diagnostic term. This will be one of the accepted classifications of psychoneuroses or psychoses or some combination of them.

PSYCHOSOMATIC THERAPY

In the first group of cases in which the diagnosis "no organic disease" has already been made, psychosomatic therapy should be instituted early. It should be reemphasized that all steps should have been completed to eliminate the possibility of physical disease before psychotherapy is begun. Group 1 has been subdivided into (*a*) mild, (*b*) moderate and (*c*) severe. In group 1 a (mild), if the symptoms are of short duration, simple reassurance may suffice to effect a cure. Often, if the intelligence of the patient permits, superficial insight is extremely helpful.

CASE 1.—A married woman aged 35 with abdominal discomfort and low abdominal pain of three months' duration was asked to face the fact that there was no organic disease present. Investigation into the personal history disclosed a sense of guilt due to an extramarital relationship. The resulting tensions created a psychogenic stimulus for her gastrointestinal symptoms. Her recognition of her anxiety as a causative factor of her complaints was followed by disappearance of her symptoms. The essential fact to be recognized in these cases of mild anxiety is the value of mental catharsis. Often simple encouragement to the patient to talk out his present day problems is followed by relief of his tensions.

In cases of moderate severity and longer duration, group 1 b (moderate), reassurance alone is often insufficient. In this group it is necessary to plan and carry out a program of education for the patient. The first step is to awaken a recognition that the gastrointestinal symptoms are simply a geographic transfer of emotional tensions. The object of this educational program is to assist the patient in "calling things by their right names." The sooner the patient is able to recognize that the origin of his discomfort is psychologic the quicker will his insight develop. In this process of education the clinician should keep in mind the experience of the psychiatrist who has demonstrated that often the patient will not readily accept from the physician any explanation of psychologic mechanisms. On the other hand, those conclusions laboriously and circuitously arrived at by the patient himself have greater validity and are productive of more insight. In effect, the psychotherapeutic approach stimulates the patient to discover his own transference of tensions. The physician then repeats the patient's words, approving and agreeing with his discovery. The statement by the patient is no assurance that the thought expressed has reached the conscious level. The repetition of the same words by the physician now becomes a conscious thought, since it reaches through the auditory mechanism into the conscious awareness of the patient, coming to him from a parent ideal or substitute. This approval is accepted with gratitude, or, as the psychiatrist says, "The patient feels that he is getting love." The usual result of this situation is a further stimulation of the patient to reveal more of his hidden tensions and thus gain further insight. This learning process is often slow and halting, especially when resistance of the patient is pronounced. In such instances the use of repetition of essential points is of considerable value. The capacity to learn varies with patients. Some learn quickly, others slowly, and many tend to suppress all or part of what they have recently learned.

CASE 2.—The case of a man aged 25 with a history of low abdominal pain and bouts of diarrhea of eight years' duration serves to illustrate these points. A diagnosis of colitis had been corroborated by several physicians and accepted by his draft board as sufficiently valid to classify him as 4-F. After a physical examination, sigmoidoscopic studies and gastrointestinal x-ray examinations had failed to reveal any organic disease, investigation of his personality disclosed a clearcut feeling of inferiority. For many years a constant fear of failure arose from any type of competition in school or in his job and from his social contacts with his contemporaries, both male and female. The diagnosis was revised to one of irritable colon with psychosomatic factors. In succeeding sessions he was encouraged by free association to describe those events associated with the onset of individual attacks. After reliving several of these experiences, the importance of his fear in the production of an attack became apparent to him. It was not long thereafter that he asked the question "Does fear bring on these attacks?" This stimulated further discussions concerning the origin of his fears and the psychologic meaning of diarrhea. Clinical improvement became apparent with the comprehension of his fears and their effects. This patient has been under observation for two years. In the two mild recurrences of diarrhea that have brought him back for observation he was able to state without prodding the entire sequence of events from dread of failure to diarrhea.

In the 1 c (severe) group we have placed those patients whose symptoms are sufficiently serious to produce considerable interference with the normal routine of life. Many of these patients are unable to carry on adequately in their jobs. Frequently the complaints have existed for more than half the life span of the patients. Because of the long duration of symptoms considerable difficulty is encountered in obtaining an accurate psychosomatic history. Greater skill is required in eliciting the personality problems, many of which extend thirty or more years back into childhood. This longer period of time has created greater facility for complicated displacements of emotional tensions; the trail from these to the geographic transfer in the gastrointestinal tract is often vague. The patient's resistance to the psychosomatic approach should be anticipated by the clinician. Few if any ideas are willingly accepted and are rarely self learned. The inability to accept the significance of symbolism predominates. The experienced practitioner of psychosomatic therapy soon learns the expected limitations of treatment with this group of patients. To him they are the equivalent of the chronic cardiac, chronic bronchiectatic and the chronic nephritic so often encountered in internal medicine. Since resistance to therapy is strong and the pattern of tension complicated, the gastroenterologist must screen this group with a view to separating those patients sufficiently young and malleable for psychoanalytic therapy. For the remainder, into which group most of the older age patients fall, the only plan is "to carry on." In this technic of "carrying on," constant reassurance is the main "crutch" offered to the patient. It should never be

the only means of support. Even here the physician should encourage the patient at each session to discuss concerns other than the gastrointestinal complaints. Repeated efforts should be made to direct these energies and tensions into some creative or otherwise productive field of endeavor. In this connection the stimulation of avocations and the development of hobbies as a form of occupational therapy is of inestimable benefit. Their value is to direct the patient's thoughts of his own and his family's concerns into other channels. By this projection the patient derives not only relief from his own tensions but satisfaction in his new hobbies.

CASE 3.—A woman aged 61, with over forty years of belching, will serve to demonstrate some of these mechanisms. Since adolescence, repeated and often audible eructations of gas had driven her from doctor to doctor. In the last twenty years the additional story of a substernal lump soon after swallowing and the existence of transient cardiospasm required repeated medical investigation. The usual studies, a survey which required much less time and effort than the attempts at taking a psychosomatic history, excluded any organic disease. She was first of all persuaded to give up all medications previously prescribed. After repeated attempts, her interest in her symptoms was diverted and directed into her personal problems. Believing that some clue to the beginnings of her illness might become apparent, she was encouraged to talk of her childhood. In one of these sessions she mentioned a long cherished hope of learning to paint. The assurance that she was neither too old nor too ill to take up this hobby was grasped as the first constructive concept in many years. For the past ten years all of her free time has been spent in this pursuit. It is now six years since the last attack of cardiospasm, and her aerophagia reappeared only at the eve of her "one man show," given this season at the age of 70.

Typical case histories as the three quoted tend to oversimplify the problems of psychosomatic therapy. This faulty perspective has been created by the deliberate selection of cases, as each one of them was chosen to illustrate different phases of this group. Whenever the physician is dealing with patients whose symptoms arise solely from psychosomatic factors, the absence of organic disease is a potent ally. At moments of despair, at the end of a blind alley, the encouragement to be derived from the constant reiteration that "You have no organic disease" often enables the patients to take their first step forward on the path to health.

In the treatment of group 2, those with organic disease plus psychosomatic factors, a totally different situation exists. The patient must face and the physician must freely admit the existence of physical disease. To this burden is added the need for recognition and acceptance of a complicating psychologic disturbance. Since it is only rarely that the two states can be concurrently treated, and since priority must be granted to the therapy of the organic disease, this state of affairs is a deterrent to the onset of psychosomatic therapy. Much time and effort is spent with this group of patients, outlining the steps to be taken for improvement and possible cure. In many instances detailed explanations are required as to which symptoms arise from organic disease and which from emotional stresses. Often these have an intricate interrelationship, and for most of these patients an early acceptance of the role of the psyche and the soma is impossible.

CASE 4.—An illustrative case in the 2a (mild) group is that of a man aged 39 complaining of attacks of dull epigastric discomfort, belching and nausea for over ten years. The patient had observed these attacks carefully and knew that certain foods and emotional strain were competent producing causes of these attacks. The physical factor was a dilated, poorly functioning gallbladder without demonstrable stones. The emotional factors centered about a closely knit excitable family in which the patient and his youngish stepmother were the hub of neurotic stress. In the plan of treatment it required but little time for the patient to recognize his difficulties with his stepmother, but he had very little insight into the incestuous nature of his drive. His economic level precluded psychoanalytic treatment. In the course of time he gradually permitted himself to seek companionship out of the home. This loosening of the familial ties was followed by increasing interest in female companionship, which culminated in a happy marriage and his attacks abated. Family reunions, especially at holiday times, are usually followed by a mild recurrence of symptoms, but these are of short duration. In the last six years he has been free from anxiety in regard to his health and relates frankly and with some amusement of the family friction that precipitates each attack.

The cases of moderate severity (2b) present greater difficulties in treatment, and yet even here the results need not be too discouraging.

CASE 5.—A case in point is that of a 19 year old youth discharged from the Navy after eight months of service with a diagnosis of duodenal ulcer as his medical disability. For five years symptoms had been present, and the diagnosis had been established and confirmed. The personal history disclosed the fact that the year before the onset of his symptoms his father had died, following an operation for duodenal ulcer. The patient, an only child, left school and assisted his mother in a small retail business, which was the sole source of income for the family. The conflicts between mother and son occurred daily, both at work and in the home. Since the educational and economic level of the patient placed psychoanalytic therapy beyond his reach, the more superficial psychotherapeutic approach was attempted. As the duodenal ulcer responded to treatment, the patient discovered that his Sundays, if spent outdoors, were his most comfortable times; he was encouraged to take more physical activity. After his symptoms abated and the x-ray follow-up substantiated this improvement, he was urged to translate his love of the outdoors, and separation from his mother, into a plan for future vocation. With the aid of a scholarship he is now learning agriculture at a farm school, and his freedom from symptoms and gain of 15 pounds (6.8 Kg.) in weight provide a real promise for the future and permit a temporary classification of a successful therapeutic response.

In the last category, 2c (severe), fall the most difficult problems. Most of these patients are past 40, and their enjoyment of life has been impaired by their illnesses for many years. The physical disease is usually incurable, and the groove of psychogenic tension is often ineradicable.

CASE 6.—The case of a woman aged 64 with rheumatic heart disease, mitral and aortic insufficiency and a complicating hiatus hernia will serve to demonstrate this group. When first seen she was in mild congestive failure, which responded to the usual treatment. Her heart disease had been known to her for many years, and she had made a good adjustment to it. X-ray studies revealed a hiatus hernia, which explained her more recent attacks of high epigastric pain and its associated symptoms. To accept this additional physical disease was more than she was willing to bear, and her first reaction was to deny its existence. After corroboration of the diagnosis at other clinics, she reluctantly and even resentfully accepted the need for treatment. It was at this point that a satisfactory psychosomatic history was first obtained. Investigation of her emotional tensions revealed an involved interlinking of her gastric symptoms with her wish for self punishment and her death drive. As was to be anticipated, little headway was made in the early weeks of treatment. Slowly she began to realize that these repeated aggressive attacks had not resulted in the death that she anticipated. Gradually it became apparent that these episodes occurred only in the presence of loved ones or in public places and produced painful embarrassment. In

effect the gastric symptoms symbolized her willingness to give and her unconscious desire to receive the love and help of her dear ones. It was possible at this time to institute sufficient psychosomatic therapy to disassociate her anxieties from her gastric symptoms. She gradually attained sufficient superficial insight to provide her with the courage to meet her emotional problems without creating the mechanism of geographic transfer. In the past four years her complaints have been less frequent and less intense. The symptoms of her hiatus hernia continue, but they are no longer initiated or aggravated by her emotional tensions.

In the presentation of this clinical study it is a relatively simple task to divide arbitrarily all cases into the two groups mentioned—i. e. functional and organic. In actual practice there is in addition a small number of patients who appear to fit into an intermediary group. These patients at first manifest symptoms which arise only from functional disturbances, but after a lapse of time there develops real organic disease. This type of case is not only seen in a gastrointestinal clinic. Many internists believe that toxic diffuse goiter and essential hypertension may well fit into this group, which many of us classify as the "dynamic diseases." Schematically it can be represented as psychologic disturbance, alteration in secretory and/or motor activity, diminished cellular vitality, organic disease. In this group may be included cases with mucosal ulcerations in the esophagus, stomach, duodenum and colon. Also patients with disturbances of sphincteric control (namely, cardiospasm, pylorospasm, sphincter of Oddi spasm, anal sphincter spasm or relaxation) may well fit into this transitional group. To what extent a functional disturbance in the mechanism of the sphincter of Oddi can eventuate in organic disease of the gallbladder and/or the pancreas may at the moment be left for future speculation.

UNITY OF THE PSYCHE AND THE SOMA

The ancient belief that sickness is a visitation from the Lord, a punishment for evil, still persists in the mind of man. Although scientific advances have stamped this as superstition, we know that every man creates and obeys his own god or gods and that every man decrees and executes judgments of punishment on himself. For some it is necessary to have a daily stint of punishment and pain; at times an external cross is replaced with an internal one, such as an organic disease. Observations such as these have encouraged modern medicine to investigate the influence of psychic factors on physiologic functions. The physician of the prescientific period was concerned with the entire life situation of his patient. The exact laboratory methods of the latter part of the nineteenth century reduced the psychic theory of disease to superstition, but recently the importance of the psychic status of the patient is again receiving attention. This interest has been stimulated by the work of Freud and Breuer and their students, who clarified many personality disorders and elaborated the libido theme and ego and character analysis. This resulted in an understanding of the role of the emotional factors in illness complicated by or eventuating in actual organic damage. Interest then gradually veered to a study of symptoms produced by disturbances in the autonomic nervous system and led to what Freud termed the "future of medicine." This was the investigation of the psychogenesis of those organic disorders theretofore segregated from psychiatric interest because of their supposed organic causation.

Alkan [4] stated in 1930 that organic disease may be profitably studied by psychologic methods. He indicated that psychogenic disturbances within the field of the autonomic nervous system may result finally in organic changes whose morphologic mechanisms form only the last link of an intricate causal chain. He postulated that intrapsychic conflicts may be expressed by spasms of smooth muscle which secondarily lead to anemia of an organ, vascular stasis, dyskinesia, atrophy or infection. The result may be organic changes in visceral tissues or somatic structures, which of themselves, as terminal events, are irreversible and constitute the so-called organic disease.

Alexander and his group through their psychoanalytic researches have become convinced of the psychogenesis of gastrointestinal disorders. They believe that organic changes are the last link in a complicated functional chain of events of which the basic etiologic factors are psychologic conflicts. Alexander states that no disturbance of innervation of an organ could symbolically express a specific fantasy or a repressed idea. An organ's specific function, he believes, could be used to express a tendency of psychic direction which by a process of conflict could not normally be expressed through the voluntary nervous system and its organs of expression. To quote Alexander:

> Physiologically the process of life can well be described in terms of the three major functions of *in-taking* of substances and energy from the environment, partially *retaining* it during the process of growth and *elimination*—elimination of the end-products of metabolism, elimination of substance for the purpose of propagation and the constant production of thermic and mechanical energy. It would not be surprising at all if it should turn out that the elementary psychologic tendencies of the individual correspond to these three biologic phases of life and that psychologic dynamics . . . correspond to the biologic dynamics of life.

Alexander [5] and his group at the Chicago Institute of Psychoanalysis are impressed with the constancy and similarity between the nature of the psychologic conflict and the type of gastrointestinal disorder. They find it possible to describe the patient's emotional trends in terms of the three elemental tendencies applicable to both the psychologic conflict and the gastrointestinal symptoms. First, the wish to receive or take as related to gastric disorders; second, the wish to give or eliminate as applied to the diarrhea cases, and, third, the wish to retain as applied to the constipation cases.

Psychoanalytic theory explains why the functions of nutrition are especially adapted to express the repressed or externally thwarted receptive tendencies which we find predominantly in gastrointestinal disorders. In the psychologic development of the infant, his first interest and aim in life is concerned with the intake of nourishment. "The infantile wish to receive, to be taken care of, to be loved, to depend upon some one else, is most ideally gratified in the parasitic situation of the suckling infant. Thus these emotional qualities of receptivity become closely associated in an early period of life with the physiologic functions of nutrition." [5] Being fed becomes the equivalent of being loved. The character attributes of the adult individuals with gastric disorders were often found to be ambition and aggressiveness. They consistently strove to be independent, active and efficient, and frequently had

4. Alkan, L.: Anatomische Organkrankheiten aus seelischer Ursache, Stuttgart, Hippokrates Verlag, 1930.
5. Alexander, F.: Psychoanalyt. Quart. **3**: 501, 1934.

achieved considerable success. The unconscious desires of these individuals, however, showed that this desire for independence, ambition and self assertiveness was an overcompensation. They were leaning over backward to repress or deny completely their unconscious wish to be dependent, to be loved, to be fed. It was thus apparent that in these gastric neuroses the unconscious desire in the primitive mind was directly associated with the child's first manifestation of love, namely food and nourishment. It is presumed that the gastric symptoms are caused through these unconscious tendencies which serve as chronic psychic stimuli to the stomach, independent of the process of nutrition. The stomach behaves as if it were taking or about to take food. The greater the rejection of every receptive gratification in life, the greater will be his unconscious wish for receiving love and help. Food is craved not because of organic hunger but as a symbol of love and help. The stomach under this permanent chronic stimulation constantly behaves as if it were about to receive food or as during digestion. The epigastric distress, heartburn, belching and other symptoms of the nervous stomach are probably due to this chronic stimulation and provide one theory for the development of ulcer.

Many patients with irritable colons were found to solve the same conflict in a different yet typical manner. "The dynamic formula for these cases is as follows: 'I have the right to take and demand, for I always give sufficiently. I do not need to feel inferior or guilty for my desire to receive and take, because I am giving something in exchange for it.' The assumption is that the diarrhea apart from expressing aggression serves as a substitute for giving of real value." [5] In this conscious attitude there is again apparent the parallelism between the nature of the disorder, namely diarrhea, and the person's attitude toward life, particularly as it is reflected in his relations with other people.

It is easy to understand why the lower end of the intestinal tract is especially suited to express activity, aggression and the wish to give. Here, as in the gastric cases, it is assumed that the peristaltic function of the intestine under the permanent psychic stimulus of the wish to eject and to give becomes independent of the normal physiologic regulations. This explanation stems from psychoanalytic findings which link the early coprophilic attitude of the child with the unconscious symbolic significance of the intestinal contents as a valuable possession. The use of defecation as a sadistic or an aggressive tendency develops after the child learns to assume a deprecatory negative attitude toward his excremental function.

In the analytic study of some patients suffering from constipation, the individual's emotional attitude toward his environment can be expressed in terms that apply equally well to his psychologic problem—namely, to retain or to hold on. The conscious attitude in these individuals demonstrates an unwillingness to receive help from others or to depend on them. At the same time there exists an extreme sense of obligation to give, of which the patient tries to rid himself by renouncing all conscious tendencies to receive. The conscious attitude is summarized as "I do not take or receive; therefore I do not need to give." Added to the positive evaluation of the intestinal content as a valuable possession is found an anal-sadistic attitude, the inhibition of which contributes to constipation.

The findings of the psychiatrists in these three groups are significant, but the dynamic tensions of all patients cannot be reduced to these three types of gastrointestinal disorders. In many individuals there exists a specificity of unconscious demands, and the gastrointestinal tract is often affected by these chronic psychogenic stimuli. Psychoanalytic treatment offers the possibility of adequate knowledge of these factors—not only to the psychiatrist but to the patient. When psychoanalysis cannot be instituted, a study of the life situation of the patient and insight into his repressed tendencies and unconscious desires will reward the internist trained in psychosomatics with a clear understanding of the therapeutic problem.

SUMMARY

The psychosomatic approach has a special value in the treatment of the functional gastrointestinal patient. The high percentage of therapeutic failures hitherto encountered in this group is largely due to a lack of recognition of the psychobiologic disturbances. To meet this problem satisfactorily the gastroenterologist must be as thoroughly trained in psychosomatics as he has been in internal medical diagnosis and treatment. The acceptance of the unity of the psyche and the soma is an essential of the psychosomatic concept. A primary requisite toward the establishment of an accurate psychosomatic diagnosis is the method of taking the psychosomatic history.

Careful screening of all patients and the selection of those suitable for psychoanalytic therapy is an obligatory function of the internist. For the remainder, the gastroenterologist must render as much psychotherapy as the flexibility and intelligence of the patient permit.

In those cases in which psychologic disturbances are coexistent with organic disease, the utilization of psychotherapy in conjunction with medical therapy is of value.

The modern concept of psychosomatics reemphasizes the need for the treatment of the entire patient, his emotional difficulties as well as his physical disease.

In the future therapy of gastrointestinal diseases the psychosomatic approach will play a distinguished role.

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ABSTRACT OF DISCUSSION

DR. FRANZ G. ALEXANDER, Chicago: From the practical point of view, a differentiation between cases with and without organic disease is perhaps permissible. Theoretically the validity of such a sharp distinction is questionable. A more adequate distinction would be to differentiate between disturbances with and without irreversible structural changes. Also the subdivision into mild, moderate and severe cases is, from the practical point of view, permissible. Under the influence of traumatic experiences, mild cases may turn into moderate or severe cases. In the field of psychogenic disorders we must be aware of the extreme fluidity of such conditions. It is a well known observation that severe peptic ulcer symptoms may rapidly disappear when the patient is placed in a sanatorium and then released from his daily emotional strains. Such an observation alone suffices to demonstrate the futility of any attempt to try to attach a diagnostic tag such as mild, moderate or severe to any case as a permanent description. The more experience one has with psychosomatic disturbances of the gastrointestinal tract, the more one becomes impressed with the

capriciousness both of symptomatology and of therapeutic results. The patient's intrinsic capacity to deal with his emotional problems, on the one hand, and the flexibility of the life situation, on the other, determine the therapeutic chances. A patient whose life situation does not allow changes which would relieve emotional tensions will react more slowly to therapeutic efforts. The capacity of such patients to deal with emotional tensions must be changed, which is always a much more difficult and time consuming therapeutic task than the adaptation of the life situation to the emotional needs. The evaluation of all the etiologically important factors requires expert knowledge both in the principles of psychodynamics and pathology and in the principles of clinical medicine. I agree with the authors' emphasis in requiring that the modern gastroenterologist should be equally equipped in all these fields. The novel feature in this emphasis is the requirement of acquaintance with the principles of psychodynamics. Knowledge of clinical medicine and pathology has been for a long time a standard requirement. The fact that at present we are able to evaluate the specific role of emotional factors in the diseases of the gastrointestinal tract makes it imperative that our psychotherapeutic approach should be specific and etiologically oriented. Many patients suffering from gastrointestinal disorders can be helped by a simple ventilation of their emotional conflicts or by reassurance and rest; however, the physician should know why in certain cases such simple methods suffice and others require prolonged psychotherapeutic treatment. Without a specific knowledge of psychodynamics, the psychotherapy will remain the old hit-or-miss variety of treatment.

Dr. Sidney A. Portis, Chicago: Drs. Vorhaus and Orgel have presented an approach to a problem that confronts all of us who are doing serious thinking. I am always concerned, when looking at a patient from a psychosomatic point of view, that I am overlooking some organic disease, and I tell myself that first, last and always I am a physician, and the responsibility for any oversight lies in my hands. However, after a serious intensive investigation, when one confirms an original suspicion that the problems of a patient are entirely psychogenic in origin, it is up to the physician to outline adequate care. Many patients cannot afford prolonged psychotherapy; on the other hand, a fairly large number will have to have some psychotherapy. In order that the patient should have the medical treatment that is adequate to meet this problem, I have developed a regimen which in my own hands has yielded me the best results I have seen in over twenty-five years in gastroenterology. One of the most perplexing factors in the clinical pictures of these patients is the question of fatigue. Twenty-one months ago I began studying fatigue and came to the conclusion that it was probably associated with a disturbance of the carbohydrate metabolism which has its origin in a presumed hypersecretion of insulin. This was evidenced by the so-called flat curve which resulted when intravenous glucose tolerance tests were made. I found that these patients became hypoglycemic at the end of the two hour test. Therefore the therapeutic approach to this problem was to maintain the high level of blood sugars at all times. In order that the hyperirritable glands of the pancreas should not be stimulated too rapidly, free sugar in any form was noticeably omitted from the diet. The complex carbohydrates, proteins and moderate fat satisfy the demand for this relatively high sugar at all times. During the course of these observations the question arose Could it be possible that the early morning pain of a duodenal ulcer is associated with this relative hypoglycemia? Patients were given a small feeding before retiring. These patients got atropine three times a day and an additional dose at bedtime. They have been completely free from symptoms during the early morning hours, with no neutralization. In addition, the fatigue which was such an important part of the clinical picture had definitely disappeared. In observations and studies of over 450 patients with psychosomatic disease, which now covers a period of over twenty-one months, I was struck by the fact that the incidence of coronary occlusion was relatively nil. Also I was impressed by the improvement in the electrocardiographic findings of the middle aged group when these patients were subjected to this fatigue management. And, while I have no clinical proof for the conclusions, it might be well for all of us to begin to think seriously that there may be some relation between myocardial damage and coronary occlusion and levels of blood sugar.

Dr. Benjamin M. Bernstein, Brooklyn: I don't think we need fear that we shall have to turn all our cases over to the neuropsychiatrists; as a matter of fact, we don't even have to learn psychiatric management, because you and I have been treating our patients psychologically. Have you ever tried to analyze what faith is? Why does a patient say "I went to an awfully good doctor the other day. He spent one full hour with me." She has faith. You have hypnotized her in the belief that you are going to cure her. Another patient says "I went to a wonderful doctor the other day. Why, in five seconds he knew what was wrong with me!" Faith again. That is psychotherapy. Knowing the type of individual as he comes into your office, seeing how he walks, how he stands, how he sits and how he sweats, if you will, give a clue as to the kind of individual you are dealing with. Of course, we all go wrong, at times. We see persons who have gallstones, who are operated on for gallstones, and they don't get well! We explain by saying biliary dyssynergia, biliary stasis, chronic pancreatitis —I don't believe it matters. I believe we are dealing with individuals who have a particular kind of constitution, who have abdominal symptoms, if you will, not necessarily gastroduodenal, based on causes that we know little or nothing about. You may give the same patient the same medication the other fellow gave. With a bit of "salve" and some common sense, and a pat on the back, you are doing psychotherapy. We all have to be psychotherapists. I am afraid sometimes we may have to throw most of our abdominal conditions into the field of trophopathic disorders, even gallstones perhaps, particularly cholesterol stones, certainly colitis, even though secondary infection plays an important role, and most importantly, of course, gastroduodenal dyssynergia.

Dr. George B. Eusterman, Rochester, Minn.: As so large a percentage of patients with gastrointestinal disorders harbor no demonstrable organic lesions, every gastroenterologist also should have neuropsychiatric training. A preponderance of psychoneurotic patients have as their presenting complaint disturbances of a gastrointestinal nature. Unlike Dr. Palmer, I am strongly of the opinion that gastroduodenal ulceration, in the large majority of cases, has its origin in physical, nervous or emotional stress, or a combination of these factors. We can no longer dismiss the neurotic patient with the cheerless statement that there is nothing wrong with him and prescribe a sedative as a routine measure. Of course the psychotherapeutic value of a thorough, even though negative, examination by a physician in whom the patient has every confidence is generally recognized. We have postponed too long doing for these unfortunate individuals what for years we have done systematically for arthritic and diabetic patients for example, namely group instruction and treatment by lecture, demonstration and personal interviews. This is being successfully done at our state university, as it has been done in various Eastern institutions for some years. Following the exclusion of any significant organic disorder by the internist, which includes the application of all modern approved methods of examination, the neuropsychiatrist then takes charge. Among other things, the emotional factor underlying the complaint is determined and the patient given an adequate insight into the mechanism which gives rise to his physical disturbances as the result of a personality disorder. Usually after six to eight weeks recovery follows unless the patient is actually psychotic, uncooperative or the victim of a deep seated systematized neurosis. Finally, one is always faced with the problem of the psychoneurotic patient who also harbors an organic lesion, duodenal ulcer in particular. Not infrequently it is essential to determine which condition is paramount, the neurosis or the ulcer. We have all had the somewhat embarrassing experience of successfully healing by treatment or

removing by gastric resection lesions of the digestive or biliary systems only to realize that cure was not effected and that the patient sooner or later continued to complain as volubly as before.

DR. S. ZACHARY ORGEL, New York: In psychosomatic disorders we are not interested in obtaining as many facts as possible but in getting information that has not been prepared for the occasion. Thus one learns how the symptoms develop and what the symptoms meant to the patient from early childhood. He is stimulated to give the information by having him describe his organic complaints without making him aware of a psychologic background in his illness. He will give the material necessary for a proof of a psychosomatic unit in his illness only if he is not aware of what he reveals to us about his emotional life. The patient, if allowed to talk without being asked leading questions, will usually give a detailed account of his complaints and ideas about his illness. When he has exhausted his ideas and recollections about his organic disturbance, he will stop and wait to be questioned. After being certain he will not continue spontaneously, the examiner repeats one of the points of the patient's last sentence, in an interrogative form, care being taken to use the patient's words. New information centering around his symptoms is usually now stimulated. He drifts into giving a communication in which he inattentively mixes emotional and somatic material. References to persons in his environment, both from the present and from the past, then begin to appear. This usually is the beginning of a critical phase of the examination. Material will now appear which leads to the three essential points in establishing the psychosomatic unit: the old conflict, the recent conflict and the time factors. Persons first appearing are usually relevant from the psychosomatic point of view. Correlation of organic illness with the patient's emotional life now becomes evident. Thus we learn a great deal about the neurotic conflicts of these patients.

Clinical Notes, Suggestions and New Instruments

RETRO-ORBITAL ADRENAL REST TUMOR

LEE W. HUGHES, M.D., AND ANTHONY AMBROSE, M.D.
NEWARK, N. J.

This case is being reported because of the apparent rarity of its occurrence. A search of the textbooks in ophthalmology at our disposal has failed to disclose a report of any such case. No doubt there have been others seen which probably were not reported.

The patient was a woman aged 21, whom we first saw March 21, 1944. Her past and present health had been good. She had measles, pneumonia and mumps during childhood. Her chief complaint was that the left eye had been gradually protruding forward, downward and inward since February 1939. At that time she was struck over the left eye with a hard packed snowball. There was a sharp stinging pain in the eye. Cold compresses were applied and by the next morning the eye felt better. She stated that it never became discolored. She did not have any further trouble until early in 1941, when she noticed a slight swelling over the left eye, which appeared at certain intervals. By the following year the swelling was more definite and she began to notice that the eyeball was protruding.

Fig. 1.—Tumor mass.

Examinations revealed that the vision in the right eye was 20/100, with correction 20/30; vision in the left eye was 20/70, with correction 20/30.

There was a moderate swelling of the left upper lid, especially in its outer two thirds. The eye was protruding downward, slightly inward, and noticeably forward. The ocular motility was good; there was no diplopia. The condition was thought to be a hemangioma which resulted from the accident in 1939.

She was operated on under general anesthesia April 13, 1944, at the Newark Eye and Ear Infirmary. The external canthus was split directly outward to the edge of the orbit. The conjunctiva was open and dissected backward. The external rectus muscle was fixed with catgut and then severed near its insertion. Digital exploration of the retrobulbar space revealed the presence of a more or less olive shaped swelling behind and slightly above the globe. It seemed to be firmly fixed. A curved blunt pointed scissors was placed along the outer side of the bony orbit until the lateral border of the tumor was reached, and then with careful spreading of the blades the tumor was partially dislocated. The remainder of the dislocation was done with the small finger tip. There was surprisingly little bleeding. The conjunctiva was closed with interrupted silk

Fig. 2.—Appearance before operation.

Fig. 3.—After operation.

stitches. The external rectus was reattached. The skin was closed with interrupted black silk sutures. A pressure bandage was applied.

A section of the tumor was sent to Dr. Harrison S. Martland, who had the following to say after the examination:

"After examining a microscopic slide of the tumor removed from the orbit I am expressing the following opinions:

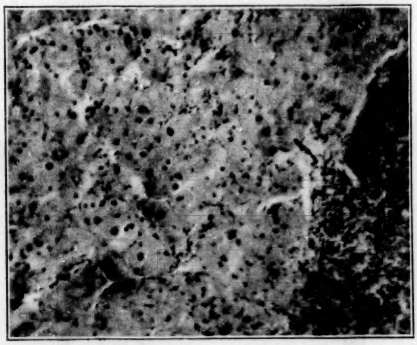


Fig. 4.—Section under low power.

"The tumor is well encapsulated and appears to be a benign tumor, in that there is absence of mitosis, hyperchromatism and other malignant features.

"The tumor is composed chiefly of cells which appear like liver cells or cells from the adrenal cortex, and these are arranged in a manner similar to zona fasciculata of the adrenal cortex, occasionally showing lumen formation.

"There are many areas of small round cells.

"I am inclined to interpret the tumor as a congenital fault somewhat in the nature of an adrenal rest (which has been

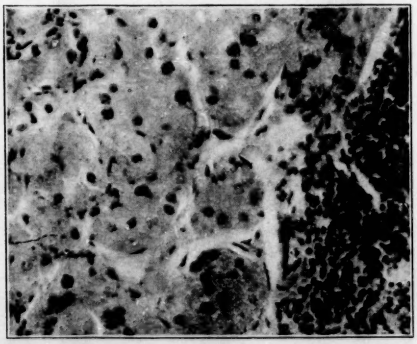


Fig. 5.—Section under high power.

described in the region of the head) and am apt to regard the collections of small round cells as probably of neurogenic origin."

Postoperatively the patient made an uneventful recovery. There was only a slight diplopia when looking to the extreme right, which disappeared within a few weeks.

965 Broad Street—31 Lincoln Park.

CONTINUOUS INTRAMUSCULAR INFUSION OF PENICILLIN

FRANKLIN I. HARRIS, M.D., SAN FRANCISCO

The methods of administering penicillin described in the current literature are (1) continuous intravenous infusion, (2) repeated intramuscular injections and (3) topical application. In none of this voluminous literature have I been able to find any description or recommendation for giving this valuable drug by continuous intramuscular infusion.

Continuous intravenous infusion is objectionable because of the special and constant nursing care required; the occasional formation of thrombophlebitis at the site of injection and finally the constrained position of the patient's arm for twenty-four hours a day limits his activity and comfort.

Repeated intramuscular injections of penicillin are disturbing and painful and often prevent a patient from receiving a sufficient amount of rest in a twenty-four hour period. The nursing care is likewise increased.

As penicillin became available to civilian hospitals in greater amounts, our two surgical residents Drs. Walter Leff and Lewis Karp suggested that we give penicillin to the patients in the surgical service by continuous intramuscular clysis. This suggestion was immediately accepted and since May 15, 1944 has been the method of choice for the administration of penicillin at the Mount Zion Hospital, San Francisco.

TECHNIC

The contemplated total dose of penicillin for twenty-four hours is dissolved in 1,000 cc. of sterile solution, exactly as in the preparation for continuous intravenous infusion. This solution is then allowed to run in by a drip method as an intramuscular clysis. One or both thighs may be utilized. The regular intramuscular clysis needles are used, and the outer or inner side of the thighs is the favorite site of administration as in any other type of intramuscular clysis. The usual rate of flow when 100,000 units has been dissolved in 1,000 cc. of saline solution is between twelve and fifteen drops per minute, which gives approximately 50 cc. per hour or about 5,000 units per hour. This rate of flow can be easily increased to give 10,000 units per hour or any desired dose. Many variations can be easily arranged. If more fluid intake is desired, the 100,000 units can be dissolved in two flasks of 1,000 cc. each.

This method requires no special nursing care, once the needle is inserted intramuscularly and the rate of flow established. The patient does not need close observation from this standpoint. Lately we have found it more advantageous to place the needle only in one leg. This permits the patient greater activity and movement in bed.

In the majority of cases we have averaged about 5,000 units per hour by intramuscular infusion throughout the twenty-four hour period. Our laboratories have not at the present time found it possible to determine the blood level and concentration of penicillin, but those of us who have used this method of administration believe that the penicillin effect is probably more evenly distributed and kept at a better level than by the repeated intramuscular injection. Further studies will have to be made in the future of the blood levels that are obtained by this method.

The clinical results with the continuous intramuscular method of administering penicillin have been eminently satisfactory in approximately 25 cases in which this method has been used from May 15 to August 1. There have been no complications, no abscess formation and no nursing difficulty that could be attributed to this method of administration.

This short note is submitted because it is believed that sufficient publicity has not been given to this safe and valuable method of administering penicillin.

450 Sutter Street.

From the Division of Surgery, Mount Zion Hospital.

SUBACUTE BACTERIAL ENDOCARDITIS TREATED WITH PENICILLIN

B. C. COLLINS, M.D., MEMPHIS, TENN.

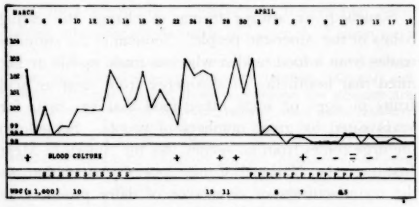
B. W. H., a white boy aged 10 years, was admitted to the Methodist Hospital Oct. 2, 1943 with a history of fever for the preceding four days and complaining of pain in the left lower chest, anorexia and general malaise.

X-ray examination at this time revealed a lobar pneumonia of the left lower lobe, infiltration of both hilar regions and slight enlargement of the heart, but no abnormality in contour.

Physical examination revealed an acute inflammation of the tonsils and tonsillar pillars. There was bronchial breathing and moderate dulness over the left lower lobe. Examination of the heart revealed a palpable thrill, a very loud blowing systolic and a subdued diastolic murmur about 2 centimeters to the right of the mitral area. These murmurs were not transmitted to the axilla or posteriorly. A tentative diagnosis of lobar pneumonia and congenital heart disease was made.

Laboratory studies showed 54 per cent hemoglobin, 2,950,000 red blood cells and 12,250 white blood cells, with a differential count of 76 per cent neutrophils, 23 per cent lymphocytes and 1 per cent large mononuclears. Urinalysis was negative. The corrected sedimentation rate by the Wintrobe method was 30 mm. in one hour.

Treatment consisted of one 300 cc. blood transfusion, sulfadiazine 1 Gm. immediately and 0.5 Gm. every six hours for two days, then 0.5 Gm. every twelve hours. The blood concentration was 12.9 mg. per hundred cubic centimeters on the second day of therapy. The clinical course was very satisfactory, the temperature returning to normal in seventy-two hours. The patient was discharged home on the ninth day, apparently cured.



Clinical course. *S*, sulfamerazine; *P*, penicillin.

The patient returned to the hospital on Feb. 9, 1944 with a fever of 104.2 F. A blood culture positive for Streptococcus viridans was obtained. X-ray examination at this time revealed an atypical lobar pneumonia of the right base. There was prompt and satisfactory response to sulfamerazine, 1.5 Gm. immediately and 0.5 Gm. every six hours for six days. The temperature dropped to normal on the second day of treatment but became elevated again four days after the drug was discontinued.

Blood cultures positive for Streptococcus viridans were obtained on February 11 and 29, March 22, 27 and 29 and April 6.

The patient received another course of sulfamerazine from March 6 to March 16 with little improvement, as shown in the accompanying chart.

Treatment with penicillin was started on March 31. The dosage was 100,000 Oxford units daily divided into eight equal parts and given every three hours intramuscularly. The total given was 1,400,000 units over a period of fourteen days. The response was rapid and very dramatic, the temperature dropping to 99 F. on the second day of treatment and becoming normal the following day. Negative blood cultures were obtained on April 8, 10, 12, 14, 16, 17, 19 and 24. The clinical improvement was excellent and on September 16 the patient was still afebrile and symptom free.

Council on Foods and Nutrition

ACCEPTED FOODS

The following additional foods have been accepted as conforming to the Rules of the Council on Foods and Nutrition of the American Medical Association for admission to Accepted Foods.

GEORGE K. ANDERSON, M.D., Secretary.

PREPARATIONS USED IN THE FEEDING OF INFANTS (*See* Accepted Foods, 1939, p. 156).

Harold H. Clapp, Inc., Rochester, N. Y.

CLAPP'S (BABY FOODS) CUSTARD PUDDING.

Analysis (submitted by manufacturer).—Total solids 21.86%, fat (by acid hydrolysis) 2.73%, protein (N × 6.25) 3.06%, ash 0.62%, crude fiber 0.006%, carbohydrates (by difference) 15.44%, calcium (Ca) 137.09 mg. per hundred grams, phosphorus (P) 92.72 mg. per hundred grams, iron (Fe) 0.5 mg. per hundred grams.

Calories.—0.99 per gram; 28.1 per ounce.

Vitamins.—Vitamin A (carotene) 156 U. S. P. units per hundred grams.
Vitamin B_1 (thiamine) 0.03 mg. per hundred grams.
Vitamin C (ascorbic acid) 0.34 mg. per hundred grams.
Vitamin G (riboflavin) 0.38 mg. per hundred grams.

Harold H. Clapp, Inc., Rochester, N. Y.

CLAPP'S STRAINED PEACHES.

Analysis (submitted by manufacturer).—Total solids 14.53%, protein (N × 6.25) 0.43%, ash 0.37%, crude fiber 0.09%, fat (ether extract) 0.06%, carbohydrates (by difference) 13.58%, phosphorus (P) 16.6 mg. per hundred grams, calcium (Ca) 4.8 mg. per hundred grams, iron (Fe) 0.37 mg. per hundred grams, copper (Cu) 0.10 mg. per hundred grams.

Calories.—0.57 per gram; 16.2 per ounce.

Vitamins.—Vitamin A (carotene) 169 U. S. P. units per hundred grams.
Vitamin B_1 (thiamine) 0.02 mg. per hundred grams.
Vitamin C (ascorbic acid) 2.0 mg. per hundred grams.
Vitamin G (riboflavin) 0.3 mg. per hundred grams.

Harold H. Clapp, Inc., Rochester, N. Y.

CLAPP'S STRAINED PEARS.

Analysis (submitted by manufacturer).—Total solids 15.61%, crude fiber 1.02%, protein (N × 6.25) 0.56%, ash 0.21%, fat (ether extract) 0.08%, carbohydrates (by difference) 13.74%, phosphorus (P) 14.2 mg. per hundred grams, calcium (C) 8.5 mg. per hundred grams, iron (Fe) 0.69 mg. per hundred grams, copper (Cu) 0.09 mg. per hundred grams.

Calories.—0.58 per gram; 16.5 per ounce.

Vitamins.—Vitamin C (ascorbic acid) 0.74 mg. per hundred grams.
Vitamin G (riboflavin) 0.03 mg. per hundred grams.

Gerber Products Company, Fremont, Mich.

GERBER'S CHOPPED VEGETABLE AND LAMB WITH BARLEY, consisting of potatoes, water, carrots, lamb, green beans, pearl barley, barley flour, onion powder and salt.

Analysis (submitted by manufacturer).—Moisture 86.8%, ash 1.2%, fat 2.2%, protein 2.4%, crude fiber 0.4%, carbohydrates (by difference) 7.0%, Ca 0.010%, P 0.040%, Fe 0.0009%, Cu (?).

Calories.—0.6 per gram; 16 per ounce.

Vitamins.—Protocols of assay (1941) show that this product contains 900 international units of vitamin A, 0.032 mg. of thiamine and 2.3 mg. of ascorbic acid for each hundred grams.

Gerber Products Company, Fremont, Mich.

GERBER'S CHOPPED VEGETABLE AND LIVER WITH RICE, consisting of potatoes, water, celery, tomato pulp, beef liver, carrots, rice, salt and onion powder.

Analysis (submitted by manufacturer).—Moisture 88.7%, ash 1.3%, fat 0.3%, protein (N × 6.25) 2.6%, crude fiber 0.3%, carbohydrates (by difference) 6.9%, Ca 0.015%, P 0.044%, Fe 0.0013%, Cu 0.00031%.

Calories.—0.4 per gram; 12 per ounce.

Vitamins.—Protocols of assay (1941) show that this product contains 8,100 international units of vitamin A, 0.074 mg. of thiamine and 1.5 mg. of ascorbic acid for each hundred grams.

Gerber Products Company, Fremont, Mich.

GERBER'S PINEAPPLE-RICE PUDDING (JUNIOR FOODS).

Analysis (submitted by manufacturer).—Moisture 74.36%, ash 0.85%, fat 0.62%, protein (N × 6.25) 1.67%, crude fiber 0.20%, carbohydrates (by difference) 22.30%, calcium 0.0416%, phosphorus 0.0378%, iron 0.00085%, copper 0.00004%.

Calories.—1.02 per gram; 29 per ounce.

Vitamins.—Carotene, 0.0135 mg. per hundred grams.
Thiamine, 0.034 mg. per hundred grams.
Ascorbic acid, 0.78 mg. per hundred grams.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, SEPTEMBER 23, 1944

POSTWAR TRAINING FOR RETURNING OFFICERS

Elsewhere in this issue is a preliminary estimate, prepared by the Council on Medical Education and Hospitals, of the probable demand for advanced graduate training by returning medical officers. The report suggests ways in which efforts may be applied to meet the need. Returns on the questionnaires sent to all medical officers are now being received in numbers which clearly reflect the widespread interest in continuation training. Analysis of an early random sample has already been published.[1] Such data are indispensable for effective planning.

Probably 10,000 medical officers will want house officer training of six months or more. Since demobilization will probably extend over some time, the number of additional places required will probably approximate 5,000 during the first year. Apparently most expansion will be required in otolaryngology, surgery, obstetrics and gynecology and ophthalmology, which may need to double their facilities. Expansions of 50 to 70 per cent seem to be indicated in urology, internal medicine, orthopedic surgery and pediatrics.

Somewhat fewer officers are likely to seek shorter courses; about 9,000 officers will seek full time training of one to six months' duration. In 1943-1944 there were nearly 27,000 physicians enrolled in such courses. However, over 90 per cent of these were in short courses of about a month. Apparently more than 90 per cent of those desiring review or refresher courses will seek training in somewhat longer courses of two to six months' duration. Many more courses of that duration will be required.

In the light of the figures given, all institutions which can contribute to meeting the need are obligated to review their resources and prepare estimates of the additional facilities they can provide, to facilitate the achievement of the program outlined (page 257).

The communication from Col. Perrin H. Long, published on page 239 of this issue, further underscores the deep concern of medical officers with regard to their further training after the war and indicates that the work being carried out by the Committee on Postwar Medical Service meets a real demand. The suggestions of Colonel Long are similar to the program already being developed. With continuing cooperation of the Committee on Postwar Medical Service, the Council on Medical Education and Hospitals, the Surgeons General of the armed forces, medical schools, American boards in the medical specialties and others primarily concerned, there is every reason to expect that the needs will be met. Information now being collected from all educational institutions will be made available in the near future. In the meantime, medical officers can be assured that every effort is being made, and with success, "to cut through to the goal, because then, with the facts before them . . . [medical officers] . . . will be able to plan their existence in the postwar world."

1. Lueth, H. C.: Future Educational Objectives of Medical Officers, J. A. M. A. **125**: 1099 (Aug. 19) 1944.

CHANGING FOOD HABITS FOR BETTER NUTRITION

Somebody is always trying to change the eating habits of the American people. Sometimes the stimulus comes from a food faddist who has made up his or her mind that health lies in abstinence from meat or acid fruits or eggs or some other food that has been for years eaten by great numbers of people. Sometimes the urge comes from an agency like the American Meat Institute, the National Confectioners' Association or the manufacturers of cereals or of dairy products or the bakers of bread, telling us that we ought to eat more of their particular products. Associated with these campaigns are the promulgations of groups of scientists or nutritional authorities who want everybody to be quite familiar with the vitamin, mineral, protein, carbohydrate and fat content of everything they eat and to eat strictly according to formula.

Recently a reaction has been voiced in Great Britain against present trends in eating, led largely by Lord Thomas Horder, who is president of the Food Education Society. Lord Horder [1] said that the overweighting of food education by the appeal to science has induced in many people a spirit of antipathy. They feel that eating and drinking were never intended to be subject to chemical equations. Lord Horder has emphasized the factor of safety in the human body in relation to nutrition. He said, as quoted by the *Lancet*:[2]

> Health is not a tight-rope and our bodies are neither anxious nor solicitous; they are not puritanical; they will dine with publicans and sinners and often, though not always, come away none the worse, but even better. Our bodies are wonderfully adaptable, they will tolerate a large range of strains and stresses. This is not to say that we can *continue* to abuse our bodies over a long period. But this "balancing" of our diet is sometimes taken too far. The principle is sound and it

1. Joy Through Food, editorial, Lancet **2**: 47 (July 8) 1944.
2. Cautious Food Reform, extract from Lord Horder's presidential address to the Food Education Society, Lancet **2**: 53 (July 8) 1944.

needed stating, even stressing. Balance the diet by all means; to balance the day's food is not a bad idea; but to balance the individual meal is not necessary at all. . . .

This statement by Lord Horder should give pause particularly to the pronouncements that now assail us constantly over the radio, telling us that this or the other product takes care of all of our deficiencies of vitamins or of minerals or of both. People are likely to get from these announcements the notion that every one is deficient in something or other and that the only hope of health is a superabundance of all the known vitamins and minerals. For them Lord Horder has a special caution:

. . . We should teach a little less than we think we know, rather than strain the few facts of which we seem certain to explain conditions which are complex and probably result from more factors than the few that have been revealed to us.

Supplementing the statement by Lord Horder is one by F. Le Gros Clark,[3] who at some length analyzed food habits and how to change them. The eating habits of people are for the most part traditional. Children learn to enjoy certain foods in their homes and carry their prejudices over to adult life. Many of the food habits are a reflection of factors that have nothing whatever to do with the science of nutrition:

Most of those who lecture or write on nutrition are members of the professional classes (research workers, doctors and teachers), whereas most of those who receive the message are the families of miners, dockers, railway men, farm workers and the like. For food habits the latter have acquired in the process of generations there is always a set of comprehensible causes, among which are not only mistaken or outworn ideas about correct diets but also such factors as storage space, cooking facilities, income levels and mealtimes.

Our eating habits are affected by the ability of housewives in general and of cooks to cook. Many a mother has pretty definite ideas about what is good for the family in the way of food, but the preferences of the father and the children are more likely to dictate the dietary than the mother's knowledge of scientific nutrition. If the father and the children refuse to eat turnips or squash or beet tops, the mother gains little by serving these items.

Since established habits of eating are hard to change, more emphasis should be placed on desirable traits in the early impressionable years. The stress on proper feeding of infants and children over the past several years should soon be paying dividends in better eating habits in the younger generation. The gains made should be maintained. Without change in established eating habits, improvement will come from the continuation and expansion of the food enrichment program. Such generally eaten foods as bread, flour, cereals and milk become effective carriers of nutrients which are known to be commonly deficient in diets of the general population. Without change in character of the food, its nutritional value to the consumer is enhanced.

3. Clark, F. Le Gros: Food Habits and How to Change Them, Lancet 2: 53 (July 8) 1944.

The impositions and restrictions of wartime are without permanence. When restrictions are released, people will go back again to eating what they like. Even the law cannot make people enjoy eating something they do not like. But some benefits on our national nutrition will undoubtedly result from the war aside from the increased scale of food production. There will be new types of food available as a result of research and innovations in transportation. Old familiar foods will be made more attractive to the eye and the palate. The sum total of our wartime food experience can hardly be other than good. Nutritionists and others concerned with the correction of our nutritional delinquencies may extend the gains thus far made. No doubt a planned state would provide community kitchens and dining rooms in which the workers and their families would eat exactly what the nutritionists put out for them, but as long as our civilization continues to be based on the family, food habits are going to control eating.

THE PREVENTION AND TREATMENT OF FETAL ERYTHROBLASTOSIS

Fetal erythroblastosis in by far most cases appears to be the result of Rh incompatibility on part of the father and the mother. Does the demonstration of such incompatibility bring with it practical means for the prevention and cure of erythroblastosis?

At present the main if not the only means of successful prevention would be the avoidance of impregnation of an Rh negative woman by an Rh positive man. The immediate cause of Rh erythroblastosis is the destruction of red corpuscles of the fetus by specific antibodies from the blood of the mother; the question has been raised whether it is possible to remove the antibodies in the mother's blood by injecting the antigen, that is, blood containing the Rh factor. Broman,[1] who has made extensive studies on the Rh factor, introduced blood from the Rh positive father into the isoimmunized Rh negative mother, with an apparently wholly negative result. Further and comprehensive experiments along this line seem indicated. Possibly effective methods of removing antibodies from the mother's blood may be found if the Rh substance becomes available in adequate quantities. In experiments it has been shown that removal of different antibodies from the blood of immunized rabbits readily results from the intravenous injection of the corresponding antigen.

Henceforth special care must be taken in blood transfusion of prospective mothers. Rh negative women in the childbearing age should not be transfused with Rh positive blood because, if done, Rh antibodies may be produced which can cause erythroblastosis in a subsequent Rh positive fetus. The sensitization of an

1. Broman, Birger: The Blood Factor Rh in Man: A Clinico-serological Investigation with Special Regard to Morbus Hemolyticus Neonatorum (Erythroblastosis Fetalis), Acta pædiat. 31, Supp. II, 1944.

Rh negative woman to the Rh factor may be harmful to the future offspring.

In the case of Rh incompatible couples with previous erythroblastic episodes, the mother may be tested at intervals for Rh antibodies if pregnancy occurs again with a view to producing premature viable birth, should the results be increasingly positive. As yet the suggestion has not been approved by obstetricians. The experience so far indicates "that nothing is to be gained by premature delivery." [2] Whenever there is reason to fear erythroblastosis, arrangements should be made so that if necessary transfusion of the child with suitable Rh negative blood can be done as soon after birth as possible. There are as yet no methods available for intrauterine control of erythroblastosis. Treatment can be given after birth only. Since some 50 per cent of children with erythroblastosis die before they are 7 days old [1] the earlier proper treatment is given the better. The treatment of choice [3] is the introduction of Rh negative blood—a substitution treatment. Rh negative blood of the same group as that of the infant is used because there may be anti-Rh bodies in the blood and tissues of the child. Fortunately suspensions of the mother's red cells can be used after thorough washing in salt solution to remove all traces of the plasma. It has been recommended that infants with erythroblastosis be not nursed by their mothers because the milk may contain anti-Rh bodies.[4] It was noted long ago that infants with erythroblastosis did not thrive on the mother's milk. The results of prompt transfusion in erythroblastosis are favorable.[5] In Javert's series the case death rate was reduced from 73 to 14 per cent.

EXIT TALCUM FROM THE SURGICAL SCENE

From the earliest days of the emergence of surgery in the fertile valley of the river Nile down to Ignatz Semmelweis's epochal discovery, surgeons with few exceptions shared with the rest of humanity the title of the "great unwashed." Then, in 1861, hand washing emerged from the realm of Mosaic ritual into the sphere of inviolable surgical technic. About forty years later came the discovery, after Pasteur's and Lister's investigations, that mere hand washing was not adequate protection either for patient or for surgeon; therefore sterile cotton or lisle gloves were added to the surgical armamentarium. Only a few years later Halsted supplanted fabric with rubber gloves sterilized by boiling and put on under sterile water or a suitable antiseptic solution. This technic in turn, and in short order, was replaced by steam autoclaving of the rubber gloves and donning them when dry, with the aid of the generous use of talcum powder. This powder was dusted inside the gloves before and also after sterilization, and on the hands of the surgeon before slipping them into the gloves.

That talcum and similar powders are not innocuous has been known for well over half a century. In 1881 Hippolyte Martin [1] described the potentially grave hazards incident to the use of these powders. Only well within the past ten years, however, have surgeons and pathologists recognized the dangerous properties of talcum powder. More than a score of studies have been published detailing the serious consequences that follow the entrance of talcum powder into animal tissues by way of operative wounds, the peritoneal cavity, the brain, the rectum, the vagina or the cervix and through numerous other routes.

The resultant lesions follow a definite structural pattern, which initially is that of the usual foreign body reaction represented by tubercle-like formation, with talc crystals demonstrable in most of the tubercles. This demonstration is greatly facilitated by the use of polarized light. Later a fibrosis occurs. Naturally when these processes occur in the peritoneal cavity they lead to peritoneal adhesions frequently causing intestinal obstruction. These lesions are permanent because the body does not have adequate reparative power against talcum, which is essentially a silicate and which therefore induces a silicosis.

The evils of talcum manifest themselves most tragically in the field of abdominal surgery in the form of postoperative intestinal obstruction. German [2] studied a series of surgical patients by removing biopsy specimens from the omentum in 50 cases in which laparotomy had been done. Using polarized light technic he demonstrated the presence of talc crystals in 80 per cent of the specimens. These results of German's study furnish startling and disturbing evidence of the frequency with which talcum escapes into the peritoneal cavity during operative procedures. It does not always follow, of course, that the presence of intraperitoneal talcum invariably causes symptoms of grave abdominal disease; but it requires no stretch of imagination to grasp the possible hazards attendant on the presence of a siliceous powder in the peritoneal cavity.

Despite these hazards, however, and despite an appreciable wealth of scientific literature on the subject, investigators [3] at the Barnard Free Skin and Cancer Hospital of St. Louis were the first to

2. Potter, Edith L.: The Present Status of the Rh Factor, Am. J. Dis. Child. **68**: 32 (July) 1944.

3. Davidsohn, I.: The Rh Factor, M. Clin. North America, January 1944, p. 232.

4. Gimson, J. D.: Hemolytic Disease of the Newborn (Erythroblastosis Fetalis): Its Treatment with Rhesus Negative Blood, Brit. M. J. **2**: 293, 1943. Javert, C. T.: Erythroblastosis Neonatorum: An Obstetrical Pathological Study of 47 Cases, Surg., Gynec. & Obst. **74**: 1 (Jan.) 1942; Further Studies on Erythroblastosis Neonatorum of Obstetrical Significance, Am. J. Obst. & Gynec. **3**: 921 (June) 1942. Witebsky, Ernest; Anderson, G. W., and Heide, Anne: Demonstration of Rh Antibody in Breast Milk, Proc. Soc. Exper. Biol. & Med. **49**: 179 (Feb.) 1942. Potter.[2]

5. Gimson,[4] Javert.[4]

1. Martin, Hippolyte: Nouvelles recherches sur la tuberculose spontanée et expérimentelle des séreuses, Arch. de phys. norm. et path. **8**: 49, 1881.

2. German, W. M.: Dusting Powder Granulomas Following Surgery, Surg., Gynec. & Obst. **76**: 501 (April) 1943.

3. Seelig, M. G.; Verda, D. J., and Kidd, F. H.: The Talcum Powder Problem in Surgery and Its Solution, J. A. M. A. **123**: 950 (Dec. 11) 1943.

substitute an innocuous powder for the troublesome talcum. These workers present evidence favoring the use of potassium bitartrate (cream of tartar) as a desirable and safe substitute for talcum. This salt is readily disposed of by the body fluids and tissues within a few hours and has the added advantage of being bacteriostatic in its action. It does not deteriorate rubber, but it is a bit more costly than talcum powder. In a later contribution the Barnard Hospital workers [4] announced the discovery by which corn starch can be robbed of its gelling property and thus rendered even more suitable as a dusting powder than is potassium bitartrate, because it is smoother in texture and is more readily disposed of by the diastate mechanism of the body. This new, nongelling starch cannot be manufactured until after the cessation of war, owing to problems of priorities. In the meantime the somewhat more costly potassium bitartrate will serve. In any event the surgical scene seems to be set for the exit of talcum.

HEAT PRODUCTION ON MIXED DIETS

During the last decade Forbes and his associates [1] of the Institute of Animal Nutrition, Pennsylvania State College, have collected experimental evidence that with animals on equicaloric mixed diets progressive decrease in total heat production is associated with increases in protein percentage. This is contrary to general clinical belief, which assigns a dominant thermogenic role to protein. Forbes and Swift [2] have emphasized the possible bearing of these results on current problems of military dietetics and animal husbandry.

Total heat production was measured in selected groups of white rats during seven hour experimental periods on two consecutive days, the animals sleeping during most of the period. The first determinations were made with the animals on a minimum basal diet. The experiment was repeated seven days later with the same rats on the same diet plus measured amounts of beef protein, dextrose or lard, tested alone or in combination. The increased heat production on the supplemented diets was taken as a measure of the energy expense of utilization of the supplement. Accepting this interpretation, the net energy value of the supplement was calculated by subtracting this caloric expense of utilization from the gross caloric value of the supplement.

When fed alone it was found that 32 per cent of the total caloric value of beef protein was expended as necessary expense of utilization. With dextrose 20 per cent of the total caloric value was thus expended and with lard 16 per cent. The calculated net energy values of these three foods were protein 68 per cent of the gross caloric value, carbohydrate 80 and fat 84.

When these three foods were mixed, however, the heat production (energy of utilization) was much less than that computed from the individual food components. Thus, with a mixture of approximately equal parts of beef protein and lard but 11 calories of energy was necessary for utilization, as compared with 24 calories calculated for the individual components, a reduction of 54 per cent in the energy expense of utilization. Dextrose plus lard led to an "economy of utilization" of 35 per cent, dextrose plus protein 12.5 per cent and dextrose plus protein plus lard 22 per cent. It is evident from these data that in mixed diets carbohydrate is the major thermogenic factor, while lard is the major factor conferring economy of utilization.

The results of this study suggest that there is no special reason for decreasing the protein content in tropical military diets. Any desired decrease in heat production should be accomplished first by diminishing the carbohydrate, second the protein and last of all the fat in the routine mixed diet. The study also emphasizes present economic losses in animal husbandry. Manufacturing processes which skim off the fat content of by-product feed not only lower the net energy value of the feed through diminishing its gross caloric value but also decrease its net nutritional value by increasing the caloric expense of its utilization.

No adequate theory has thus far been suggested to account for the observed antithermogenic effects of fat in a mixed diet.

CONGENITAL CATARACT AND OTHER ANOMALIES FOLLOWING GERMAN MEASLES IN THE MOTHER

Gregg reported in 1941 at the annual meeting of the Ophthalmological Society of Australia a series of 78 cases of congenital cataract occurring in babies between December 1939 and January 1941. With few exceptions their mothers had suffered during the early stages of pregnancy from an exanthematous disease diagnosed as rubella. Many of the babies were of small size, ill nourished and often difficult to feed. In 44 of them a congenital lesion of the heart also was detected, in 10 the heart was apparently normal and in the remainder the cardiac condition was not recorded. The cataracts were of dense nuclear type; in 62 cases they were bilateral and in the remainder unilateral. In 11 of the 16 monocular cases the affected eye was microphthalmic. There was no similarity in the appearance of the cataracts to any of the morphologic types of congenital and developmental opacity reported previously.

Swan and his collaborators [1] investigated, under the grant from the National Health and Medical Research Council, children born in South Australia of mothers

4. Seelig, M. G.: Dusting Powder for Surgical Gloves, J. A. M. A. **125**: 1208 (Aug. 25) 1944.

1. Forbes, E. B., and others: J. Nutrition **10**: 461, 1935; **15**: 285, 1938; **18**: 47, 57, 1939; **20**: 47, 1940.

2. Forbes, E. B., and Swift, R. S.: Science **99**: 476 (June 9) 1944.

1. Swan, Charles; Tostevin, A. L.; Moore, Brian; Mayo, Helen, and Black, G. H. Barham: Congenital Defects in Infants Following Infectious Diseases During Pregnancy, with Special Reference to the Relationship Between German Measles and Cataract, Deaf-Mutism, Heart Disease and Microcephaly, and to the Period of Pregnancy in Which the Occurrence of Rubella is Followed by Congenital Abnormalities, M. J. Australia **2**: 201 (Sept. 11) 1943.

who had suffered from exanthematous disease during pregnancy. Of 61 infants examined, 36 were found to have congenital defects. The mothers of 49 infants had suffered during pregnancy from rubella, 4 had no knowledge of any exanthem during this time, 9 contracted measles during pregnancy and 2 suffered from mumps. In the cases of rubella during pregnancy 31 of the infants born subsequently exhibited congenital defects. The abnormalities included cataract, deafmutism, heart disease, microcephaly and mental retardation. With 2 exceptions all of the 31 mothers with congenitally defective children had contracted rubella within the first three months of pregnancy. No congenitally defective babies were born subsequent to the occurrence of measles in pregnancy. One case is recorded of congenital corneal opacity following mumps.

Gregg noted that the epidemic of German measles in 1940 which gave rise to most of these cases was of greater severity and was more often accompanied by complications than previous epidemics of his experience. In some of the cases of the series investigated by Swan and his associates the general constitutional symptoms and the occurrence of complications were more pronounced than usual. The Swan committee gained the impression that the disease was sometimes more intense in mothers who later gave birth to congenitally defective infants than in those whose children were born healthy. The severity of the epidemic of German measles of 1940 was probably caused by the war conditions, large numbers of susceptible recruits being herded together in military camps. The disease spread rapidly, and the causative agent may have reached a higher stage of virulence. Several investigators have shown that avian and mammalian embryos exhibit a much higher susceptibility to infectious agents than adult tissues. Possibly the human embryo possesses the same susceptibility to infection, and the etiologic factor of German measles, after penetrating the chorionic barrier, is capable of producing severe lesions in the embryo, whereas the same infection in the adult tissues of the mother leads to only minor effects. Data gathered by Swan and his collaborators suggest that the chances of giving birth to a congenitally defective child when a woman contracts rubella within the first two months of pregnancy are almost 100 per cent, and if she contracts rubella in the third month they are about 50 per cent.

Now Reese [2] reports from New York City congenital heart lesions in 3 infants. The mothers of these 3 infants contracted German measles within the first month of pregnancy, which was during a rather severe epidemic of German measles in the East about one and a half years ago. This author raises the question whether the exanthem in the mother was German measles and, if it was German measles, why congenital anomalies in the children so infected have not been observed before. A probable answer is that the congenital anomalies in his cases are the result of a more virulent or probably altered type of virus, which may have gained access to this country through an increased traffic with Australia.

2. Reese, Algernon B.: Congenital Cataract and Other Anomalies Following German Measles in the Mother, Am. J. Ophth. 27: 483 (May) 1944.

Current Comment

HOSPITAL FACILITIES FOR TREATMENT OF ALCOHOLISM

An exhaustive report [1] on the institutional facilities available in this country for the treatment of alcoholism has recently been prepared by a committee of the American Hospital Association; its conclusions can be accepted as the basis for further study and active implementation. Hospital facilities for the care and treatment of alcoholic addicts in the United States are scanty and inadequate, and those which exist are not always utilized to the best advantage. The placement of patients in institutions has depended to a greater extent on the admission policies of hospitals, economic status of the patient, and how much of a nuisance he has been to his family or to the public than it has on the type of medical management best suited to his case of inebriety. Furthermore, there has been a lack of understanding of the necessity of research directed toward the evaluation of various technics of treatment, of the need to explore new methods of therapy and the necessity of greater education of physicians and those in allied professions in the sound handling of the problem drinker. The main point of attack, it is stated, should be through the general hospital. The completeness of the facilities of the general hospital and its accessibility make it the most logical place to which an alcoholic addict or his family would turn. The alcoholic addict, like other patients suffering from acute manifestations of an underlying chronic disorder, should not be denied the advantage of a thorough study of the cause, or causes, of his condition, or advice as to the means by which it can be best treated. Although some general hospitals may object to including facilities for patients with alcoholism, the report emphasizes the overwhelming arguments for the extension of their use in this manner. The report recommends that the trustees of the American Hospital Association appoint a committee to translate the suggested program into action; its scope should include the dissemination of facts, the stimulation of discussions of the problem, the setting up of selected hospitals as experimental units for testing the possibility of incorporating the treatment of alcoholic addicts into a well integrated plan and the promotion of clinics in outpatient departments and representative hospitals. In view of the profound effect which alcoholism has on a large and often otherwise useful segment of the population, the recommendations of the committee should receive active support by individuals, philanthropic foundations, general hospitals and all others who can exert any influence on this probably growing medical and social problem.

1. Corwin, E. H. L., and Cunningham, Elizabeth V.: Institutional Facilities for the Treatment of Alcoholism, Quart. J. Stud. on Alcohol 5: 9 (June) 1944.

MEDICINE AND THE WAR

GRADUATE MEDICAL TRAINING IN THE POSTWAR PERIOD

To the Editor:—While looking over the "Program of the One Hundred and Sixty-Third Anniversary of the Massachusetts Medical Society," I noted that Dr. Allen O. Whipple was to present a paper on the subject of "How Shall We Provide Postgraduate Training in Surgery for Men at Present Serving in the Armed Forces?" While I have not had the privilege as yet of reading Dr. Whipple's address, I would like to discuss, from the point of view of a medical officer in an overseas theater of operations, the problem of postgraduate medical education for doctors who at some future period will be demobilized from the armed forces.

During the past year I have had repeated opportunities to discuss this problem with those who are most concerned with it, namely the doctors who staff the medical services of squadrons, battalions, regiments, divisions, corps, armies and those whose duties are of a nonprofessional nature in administrative sections and depots. In addition, this question has been reviewed with doctors in field, evacuation, station and general hospitals. It is believed from these discussions that an attempt can be made to gage the cross section of opinion of these doctors on the problems of postwar professional rehabilitation, their reactions toward what has been accomplished so far in this direction and to formulate the tentative desires of at least a section of the doctors in the armed forces in respect to what they would like in the way of postwar postgraduate medical education.

It seems quite clear that most of the doctors whose tour of duty has been a professional one in station or general hospitals for the greater part or all of their service in the armed forces will require much less professional rehabilitation than those who have been in field service or administrative positions. Hence for doctors who have been in hospitals, short intensive postgraduate courses dealing with cardiology, degenerative diseases, metabolic and endocrinologic disturbances would seem desirable. These men have not lost that type of analytic reasoning which is based on the correct evaluation of all factors involved and which is necessary for arriving at the diagnosis and forms the basis for the treatment and prognosis of disease.

The problems of doctors who have been in field or administrative services are entirely different. These are the men whose closest contact to professional practices for periods which in some instances amount to four years has been to hold sick call if they are field service doctors or none at all, as is the case with many of the doctors who hold administrative positions. Experience has shown, when these men are rotated to positions as ward doctors in station or general hospitals, that from three to six months is required to reeducate them in analytic reasoning and to restore their confidence in their professional ability. This observation gives a definite clue to the length of the periods of instruction which will be required, and programs for rehabilitation should be formulated so that these doctors will receive carefully supervised ward and outpatient work with patients, together with formal ward rounds, clinics and lectures on special topics, x-ray and clinical pathologic conferences and journal clubs during their period of postgraduate instruction. These men have had little opportunity to acquaint themselves with the advances in medicine which have been made since 1940. Because of their long separation from professional practices, these field and administrative medicine officers should be given a first priority on all courses in postgraduate instruction, and this priority should be continued until demobilization is complete.

Then there is a third group of doctors with whom we should concern ourselves and whose problems are not so well understood by those of us who have long been without the continental limits of the United States. These are the young men who have undergone a forced acceleration of their medical education and hospital experience in medical schools and hospitals, whose staffs have been wofully depleted during the past three years. One can judge these young doctors only by their performance, and to date our experience with them has not been broad enough to warrant any conclusions being drawn. However, it seems logical to assume that their foundation in medicine is less adequate than the foundation of those who graduated prior to June 1942. For these young men definite plans for further instruction must be made; otherwise they will be on the market at a dime a dozen in the competition for internships and residencies which will arise in the postwar period, and unless suitable preparations for their reception back into hospital training are made a chaotic situation characterized by disappointment, bitterness and resentment on the part of these young men to their chosen profession will arise.

That the future of our profession in a large measure is dependent on the maintenance of high standards of professional practice is well recognized by the doctors in the armed forces and is the reason why they are hoping and one might even say praying that means will be afforded for the professional rehabilitation which will be necessary if our standards are to be maintained in the postwar period. It is at this point that emphasis must be laid on the point that these doctors are beginning to develop an attitude of hopelessness toward their chances of postwar postgraduate education because of the lack of a specific program for rehabilitation which would permit them to begin to lay plans for the future. One looks in vain in the Report of the Committee on Postwar Medical Service (THE JOURNAL, June 24, p. 567) for a real ray of hope. All that one finds, and I quote, "Authorization has now been obtained to send a somewhat revised questionnaire to all medical officers in the Army, Navy and Public Health Service." I think it is safe to say that these questionnaires will receive a very favorable response. It will make the medical officers feel that they are not forgotten men. "The committee submits this report of a record of a year's humble but earnest endeavor." A questionnaire to make medical officers realize they are not forgotten men! Furthermore, in the President's address (THE JOURNAL, June 17, p. 461) the statement is made that "the Association is doing everything in its power to safeguard the quality and standard of medical practice during your absence and will do everything in its power to aid you when you return. The Council on Medical Education and Hospitals has made an extensive study of existing facilities for graduate medical education and is giving thought to the establishment of further facilities so that medical officers who have had an abbreviated internship or whose residency was interrupted may, on return, complete their education." These are hopeful phrases to be sure, but if the study has been made why not immediately publish its results so that doctors in the armed forces may begin to plan for the future and instead of giving "thought to the establishment of further facilities" for medical officers who have had abbreviated training, why not say that they will be made available and by utilizing the prestige and power of the Association create promptly a reality from the thought?

It is not that doctors in the armed forces are critical or resentful of the effort being made by the Association in their behalf; they are merely skeptical of its realization. While it would be foolish to presume to answer for all the doctors in the armed forces, a cross section of the opinions of a rather large group of doctors in the armed forces would lead one to believe that the following specific information should be made available in the very near future to these men:

What facilities will exist for further hospital or postgraduate training in the demobilization period?

(*a*) What medical schools and hospitals will provide such training?

(*b*) What will be the length of the periods of training and postgraduate courses?

(*c*) What will be the context of the training and postgraduate courses?

(*d*) Where will one be able in the near future to obtain information in respect to postwar training?

(*e*) When and where will one make application for this training?

(*f*) What will be the cost of this training and will it be subsidized by private or governmental agencies?

The complexity of these problems is well understood by the doctors in the armed forces, but they feel that every effort should be made to cut directly through to the goal, because then, with the facts before them, they will be able to plan their existence in the postwar period.

PERRIN H. LONG, Colonel, M. C., A. U. S.

ARMY

HOSPITAL SHIP PATIENTS WRITE IN PRAISE OF EXCELLENT CARE

The War Department announced that letters written by patients who have returned to the United States from the fighting fronts aboard army hospital ships show the sincere gratitude these sick and wounded men feel for their treatment during the ocean voyage. Some of these letters were addressed to the senior medical officer aboard ship or to the master.

The Transportation Corps, responsible for the operation of these floating hospitals, has twenty of them in operation, most of which are busy in the Atlantic and the Mediterranean, bringing back the wounded from France, Italy and Africa. The great majority of their passengers have been disembarked at the Charleston, S. C., Port of Embarkation.

In a letter signed by 4 patients, the men stated "Our quarters have been to us the essence of luxury embracing all those essentials to complete comfort we had been looking forward to renewing our acquaintance with. All the members of the Medical Corps, doctors, nurses and wardmen have unstintingly and cheerfully done their utmost to make us happy, comfortable, and to speed our recovery. Never shall we forget for a moment our great indebtedness to them all."

These "floating hospitals" can anchor off an invasion coast and take care of any need of a wounded man. Completely equipped with the latest medical and surgical devices and staffed with picked medical personnel, the wards aboard these vessels compare favorably with any. Drill in abandoning ship has been given until each member of the staff knows how to evacuate patients quickly and efficiently. In accordance with international agreements, hospital ships are painted white with a wide green band around the middle and marked with huge red crosses.

APPOINTED ASSISTANT SURGEON FOR THE NATIONWIDE ARMY AIR FORCES TRAINING COMMAND

Col. W. H. Powell Jr., formerly of Fayetteville, N. C., has been appointed assistant surgeon for the nationwide Army Air Forces Training Command. He previously served as chief of the Professional Service section of the Training Command Surgeon's office. Dr. Powell will assist in the direction of medical, surgical and related functions at AAF flying and technical schools in every corner of the nation. He entered the army as a 1st lieutenant at Fort Bragg, North Carolina, in December 1929, where he was accepted for appointment to the regular army. He graduated from the Medical College of Virginia, Richmond, in 1927. He is also a graduate of the Army Medical School, Washington, D. C., of the Medical Field Service School, Carlisle Barracks, Pa., of the radiology course at the Army and Navy General Hospital, Hot Springs, Ark., and of the School of Aviation Medicine, Randolph Field, Texas.

GEN. DWIGHT D. EISENHOWER PAYS TRIBUTE TO ARMY NURSES

A tribute to the work Army nurses are doing in the European theater was recently expressed by Gen. Dwight D. Eisenhower in a letter to Mr. Edwin B. Wilson, editor of the Brooklyn *Eagle*. General Eisenhower had been informed by Mr. Wilson of the campaign being undertaken by the Brooklyn *Eagle* and by the Brooklyn chapter of the Red Cross to recruit nurses for the armed forces. Expressing his appreciation of the nurses' work, General Eisenhower wrote "Nothing stops them in their determination to see that our troops receive the best attention humanly possible. . . . We need nurses, more nurses. The work that you and your group—and other similar groups throughout the United States—are doing must be successful."

HOSPITAL STAFFED BY GERMAN DOCTORS OPENED IN OKLAHOMA

The Army Medical Department has established a separate prisoner of war hospital staffed with doctors and medical corps men of the prisoner's nationality. The first hospital, Glennan General Hospital, with a bed capacity of 1,700, has been established at Okmulgee, Okla., for German war prisoners. American Army doctors are the chiefs of the medical services. Eight German physicians have been assigned to medical work. It is anticipated that the number will be increased to 30 or 40.

The Medical Department's new policy is in accord with the Geneva Convention Treaty, which stipulated that "it shall be lawful for belligerents reciprocally to authorize, by means of private arrangements, the retention in camps of physicians and attendants to care for prisoners of their own country."

PHYSICAL THERAPY CLINIC IN THE JUNGLE

A physical therapy clinic was created recently out of makeshift materials by members of a hospital unit on the Ledo Road, the highway which Allied troops are building from Assam, India, through Burma to China against the vigorous opposition of the Japanese. Lieut. Col. Willis M. Weeden of Woodbury, Conn., chief of surgery in the unit, assigned Capt. Hyman D. Stein of Elkins Park, Pa., and 2d Lieut. Pauline Moudy, Army Nurse Corps, of Alhambra, Calif., to the task. They made a dry heat apparatus out of a crate and electric bulbs. Stirrups with ropes and weights made weight lifting devices, a Chinese officer provided a bicycle for leg exercises, and old gasoline tanks were turned into whirlpool leg and arm baths. A water heater was created from a gasoline drum, and the hard rubber core of an old soft ball was used for hand and finger exercises.

ELECTRICALLY HEATED FLYING SUITS DELIVERED TO ARMY AIR FORCES

The General Electric Company recently delivered to the Army Air Forces the 200,000th electrically heated flying suit. The suit consists of jacket, trousers, gloves, boots and other electrically heated accessories. Each product has been subjected to a great variety of tests. Proof of the suit's ability to withstand the low temperatures encountered by airmen at high altitude has come in actual combat. Without the protection these suits afford, airmen fall easy prey to their invisible enemy frostbite. Major H. G. Thole of the AAF matériel command accepted the suit on behalf of the Air Forces from D. C. Spooner, manager of the pioneer products section of the General Electric Company, which developed the outfit.

SCOPE OF WORK AT MOORE GENERAL HOSPITAL

The Office of the Surgeon General of the Army, clarifying a recent announcement of the designation of the Moore General Hospital, Swannanoa, North Carolina, as a medical center for the study and treatment of tropical diseases, points out that the

commanding officer of the hospital is Col. Frank W. Wilson and that the chief of the medical service is Lieut. Col. Joseph M. Hayman, under whose professional direction the tropical disease center will operate. The center will not confine its attention to malaria.

CHARLES A. STAFFORD (EX SIBONEY) DESIGNATED AS U. S. ARMY HOSPITAL SHIP

The War Department announced on August 1 that on May 20 the *Charles A. Stafford* (ex *Siboney)* was designated as a United States Army hospital ship, in accordance with international practice, as set forth in the provisions of the Hague Convention X of 1907. In the future the United States Army hospital ship *Charles A. Stafford* will be operated in accordance with the provisions of applicable treaties. Notification of this designation was delivered, through channels, to the German, Japanese and Thai governments on June 3, to the Rumanian and Bulgarian governments on June 6 and to the Hungarian government on June 9. The ship's master of this and all other United States military hospital ships will at all times maintain sufficient copies of this general order for presentation to any authorized agent of an enemy belligerent who may require it for inspection.

MAJOR MANTZ APPOINTED CHIEF OF MALARIA CONTROL SECTION

Major Francis A. Mantz of Bala-Cynwyd, Pa., has been appointed chief of the Malaria Control Section in the Preventive Medicine Service, Office of the Surgeon General. Dr. Mantz has been stationed overseas as malariologist for the past three years, lastly in the China-Burma-India theater, to which he was assigned early in January 1943. Dr. Mantz graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1938 and entered the service July 1, 1941.

LIEUT. ARTHUR L. BENISON A PRISONER OF WAR

Word has recently been received by the parents of Lieut. Arthur L. Benison, formerly of Flint, Mich., that he has been held prisoner by the Japanese at Philippine Military Prison Camp No. 1 for more than two years. He was believed to be taken prisoner at Bataan. Dr. Benison graduated from the University of Michigan Medical School, Ann Arbor, in 1937 and entered the service May 15, 1941.

ARMY AWARDS AND COMMENDATIONS

Captain Harry J. Stone

The Distinguished Service Cross was recently awarded to Capt. Harry J. Stone for "extraordinary heroism in action near Anzio, Italy." The citation accompanying the award read:

"On Jan. 27, 1944 Captain Stone advanced with a company attacking in daylight across an exposed field. During the advance the enemy laid down heavy concentrations of artillery and machine gun fire on the unit. Carrying full equipment, Captain Stone kept pace with the foremost elements and, following the assault, maintained an aid station under direct enemy observation.

"Captain Stone's prompt treatment under fire was a vital necessity, since evacuation was impossible because of direct enemy observation and nearness of enemy positions.

"Four days later his battalion occupied a defensive position and was subjected to heavy and sustained enemy attack. Because of enemy observation and fire, the position could be approached only at night. Despite heavy enemy fire, Captain Stone made nightly trips to the position to evacuate the wounded. On the night of March 15-16, 1944 Captain Stone participated in an advance on two enemy strong points. Following the assault platoon under intense artillery and machine gun fire, he treated 2 casualties directly in the rear of the objectives. Leaving his place of cover, he then proceeded under continued heavy fire to treat 2 more men in an open field swept by machine gun fire. Despite the intensity of artillery and small arms fire, he carried to safety 1 of the men who was unable to walk. Still under fire, he went to the aid of 5 other casualties. During the following hours of continuous combat, Captain Stone was ever available to render aid where needed. With no regard for his own safety, he promptly treated and evacuated all casualties.

"His calm demeanor and sustained courage and skill under fire were an inspiration to all officers and men, and his performance reflects the finest traditions of the Medical Corps."

Dr. Stone graduated from Wayne University College of Medicine, Detroit, in 1938 and entered the service Aug. 1, 1942.

Major Ernest Lloyd Boylen

The Bronze Star has been awarded to Major Ernest Lloyd Boylen, formerly of Portland, Ore., for meritorious service in direct support of combat operations in Italy last December and January. He commanded, within a few miles of actual combat, a field hospital unit which, according to the citation, "admitted numerous patients too seriously wounded to permit evacuation to the rear. Major Boylen so organized the hospital as to provide the highest type of surgical and medical treatment to these patients. He displayed outstanding executive ability and resolved numerous problems of administrative and supply work incident to this function. His efficiency and devotion to duty contributed greatly to the high rate of recovery of seriously wounded patients during this period." Besides the Bronze Star awarded Dr. Boylen, his unit received a Fifth Army Plaque and clasp "for outstanding performance during January 1944." Dr. Boylen graduated from Harvard Medical School, Boston, in 1926 and entered the service Aug. 8, 1942.

Captain Lucien M. Strawn

The Silver Star Award for gallantry in action has recently been presented to Capt. Lucien M. Strawn, a battalion surgeon serving with the infantry in France. The citation accompanying the award said "Capt. Strawn's battalion was engaged in a bitter fight against a powerful enemy force. Observing many wounded and knowing their immediate need for medical attention, Capt. Strawn went forward into the heavy fire to administer first aid, with complete disregard for his own personal safety. His action saved many lives, and in performing it he displayed outstanding courage and devotion to duty. Capt. Strawn's decision to go forward through terrific enemy fire and help his fellow soldiers is in keeping with the highest soldierly and professional traditions." Dr. Strawn graduated from Temple University School of Medicine, Philadelphia, in 1940 and entered the service Aug. 18, 1942.

Colonel Emory H. Gist

Col. Emory H. Gist, camp surgeon and commanding officer, Regional Army Service Forces Hospital, was awarded the Camp Lee Certificate of Commendation for "exceptionally meritorious service" by Brig. Gen. George A. Horkan, camp commander. The citation states that Colonel Gist "supervised the growth and the extensive expansion of the station hospital, and, to a large extent, its present status as an Army Services Forces Regional Hospital is a tribute to his outstanding administration." The Certificate of Commendation adds that "through his guidance an enviably high standard of health has been maintained on this post; rigid sanitation and the control of diseases and injuries have been factors in this success." Dr. Gist graduated from Barnes Medical College, St. Louis, in 1911 and has been a regular army officer since 1922.

Captain Charles A. Speer

Capt. Charles A. Speer, formerly of Somerville, N. J., has been awarded the Silver Star for gallantry in action in France on D day, June 6. He has also been awarded the Purple Heart. Dr. Speer has been serving overseas with the Army Medical Corps since October 1942. He has received battle stars for three major engagements besides the invasion of Normandy, having seen action previously in Tunisia, Bizerte and Sicily. Dr. Speer graduated from New York University College of Medicine, New York, in 1940 and entered the service June 2, 1942.

MISCELLANEOUS

DOCTOR'S MISSING BOOK FOUND WITH DEAD JAP

When Dr. Edwin Lee of Downey, Calif., was a student at Loma Linda Medical College an instructor told the students to buy Kellogg's Surgical Approaches to Anatomy. Dr. Lee bought his volume and put his name on the fly leaf. One day it vanished from his book shelf. He sought it in vain and finally bought another. The other day he received the book from a former classmate, Major L. Lawrence Whitaker, medical officer with the American forces that took Attu. The major and another Loma Linda classmate had discovered it in a Japanese hospital on the island, following the occupation by the Americans. A letter from Major Whitaker told Dr. Lee of the weird incident of finding the book. After the Americans had completed the bitter job of wiping the tenacious Japs out of Attu, Major Whitaker and a group of officers examined the garrisons where the Jap command had its headquarters. When they entered the underground hospital they found that 18 of the Jap wounded had been killed by morphine. They lay on their backs, their hands folded across their chests, stiff in cold death. The doctor who had killed his patients lay sprawled on the floor—he had put a bullet through his head. Major Whitaker and his classmate recognized the doctor as their former classmate Paul Tatsuguchi, who had been in college with them for four years. He had received his medical degree with them and had taken the California state medical examination with them when they did.

The two officers found his personal effects and, in going through them, discovered a diary which he kept in English during the last sixteen days, when the Japs realized that resistance would prove useless. He related what was happening as the battle of Attu began depleting the Jap garrison and wounded soldiers were being brought to the hospital. He methodically set down the number of patients he was treating and what he was doing for each one. He told how he had contracted diarrhea and how ill he was. On the last day, when the Japs knew that the end had come, he described how he had killed each of his patients. He wrote a farewell note to his wife and two children who lived in Japan. In final rite he wrote a rededication of himself to his emperor, setting down a renewal of his oath and then, according to the grim evidence, took his life.

In addition to the diary, one of the Loma Linda classmates picked up a volume that had a familiar appearance; it was "Surgical Approaches to Anatomy," a book that recalled many memories. The two officers examined it, and there on the fly leaf they found the name of Ed Lee. It had been crossed out and beneath it was written that of Paul Tatsuguchi.

U. S. HOSPITALS ASSURED ENOUGH SUPPLIES AND EQUIPMENT FOR TREATMENT OF POLIOMYELITIS

The War Production Board's Office of Civilian Requirements recently announced that hospitals of the United States have been assured enough supplies and equipment to treat every one of the approximately 9,500 cases of poliomyelitis reported in the current epidemic and two and one-half times that number if they should develop. Warned in June by the rapid development of the epidemic in North Carolina and Kentucky and the occurrence of 480 cases nationally, the OCR Chemicals, Drugs and Health Supplies Division officials contacted the National Institute of Health and the National Foundation for Infantile Paralysis to determine what equipment would be needed and what was available. It was revealed that 150,000 yards of wool, 500,000 yards of muslin binder, 150,000 yards of oil silk, 100,000 blankets and 25,000 dozen safety pins would be needed, together with hot pack units. Three days later the first hot pack unit thus made available was shipped by the maker to a hospital in Washington, D. C. Three more were sent to North Carolina, 15 went to Buffalo, and other orders were being filled.

Throughout the summer OCR acted as a clearing house, putting hospitals in touch with sources of equipment and supplies and manufacturers in touch with materials. Contacts were made for inquiring parties and emergency ratings issued when necessary. OCR officials believed there would be little difficulty in meeting future emergency demands. Cooler weather is expected to help stop the spread of the disease.

HOSPITALS NEEDING INTERNS AND RESIDENTS

The following hospitals have indicated to the Council on Medical Education and Hospitals that they have not completed their house staff quota allotted by the Procurement and Assignment Service:

(Continuation of list in THE JOURNAL, September 16, page 177)

ILLINOIS

Illinois Central Hospital, Chicago. Capacity, 290; admissions, 5,378. Dr. W. W. Leake, Chief Surgeon (interns, resident).

NEW YORK

Ellis Hospital, Schenectady. Capacity, 470; admissions, 14,385. Miss Mary G. McPherson, R.N., Administrator (intern, October 1).

PENNSYLVANIA

Babies Hospital, Philadelphia. Capacity, 14; admissions, 235. Dr. Laura E. McClure, Medical Director (resident—pediatrics, October 1).

WISCONSIN

State of Wisconsin General Hospital, Madison. Capacity, 772; admissions, 13,393. Dr. H. M. Coon, Superintendent (resident—surgery).

U. S. DOCTORS SAVE TWO HUNDRED JAVANESE

The lives of more than 200 Javanese workers were recently saved after being treated by American doctors when General MacArthur's men invaded Numfoor Island, a Japanese held air base at the entrance of Geelvink Bay, off the northwest coast of Netherlands New Guinea on July 2. Hundreds of Indonesians had been transported there from other Netherlands East Indies Islands to work on defense projects. Some were on the verge of death as a result of starvation, overwork and disease. Medical personnel of American hospital ships were immediately assigned to treat these workers, a number of whom were in such critical condition that they needed blood transfusions. Most of the victims of Japanese cruelty pulled through, but some were beyond help and died en route to Australia.

WOMEN GIVEN BRAVERY AWARDS

The Office of War Information recently announced that awards from the Army and Navy for bravery and efficiency in war have been presented to 105 American women. Army nurses lead with 97 and a Distinguished Flying Cross, the highest award ever given an American woman in uniform. This was presented to Lieut. Kathleen R. Dial of Florence, Ala., in recognition of her work in taking care of 18 patients after a flying ambulance crashed off Port Moresby, New Guinea.

Flying nurses have received 29 air medals, 11 with four oak leaf clusters, for flights in combat areas. Twenty-four Purple Hearts have been received by Army nurses and four by Wacs. The Soldier's Medal for personal bravery has been presented to four Army nurses and two Wacs.

HEALTH NEWS FROM EUROPE

The Netherlands Information Bureau recently stated that diphtheria has increased thirtyfold in occupied Holland, with a weekly average of 1,800 new cases reported for the country. According to information gathered by medical personnel of the Nazi government, deaths resulting from diphtheria totaled 2,388 in 1943, as compared with the 75 reported in 1939 prior to the Nazi occupation. The tuberculosis toll has doubled within this period, the reports also revealed. In 1939 the number of deaths due to this disease was 3,595, while in 1943 it rose to 6,382.

ORGANIZATION SECTION

POSTWAR MEDICAL SERVICE

A meeting of the Committee on Postwar Medical Service was held on September 9 at the Waldorf Astoria Hotel in New York City. The following members and guests were present: Dr. Roger I. Lee, chairman, Dr. Irvin Abell, Dr. Francis G. Blake, Dr. F. F. Borzell, Dr. Frederick A. Coller, Mr. Graham E. Davis, Dr. Morris Fishbein, Dr. Alan Gregg, Dr. Charles M. Griffith, Mr. B. A. Horning, Dr. E. E. Irons, Dr. Victor Johnson, Mr. E. R. Loveland, Lieut. Col. Harold C. Lueth, Dr. W. W. Palmer, Col. George M. Powell, Dr. W. C. Rappleye, Father Alfonse Schwitalla, Miss Mary Switzer, Dr. Olin West and Dr. Ralph C. Williams.

The chairman reported the loss of a valued member of the committee, Dr. William C. Breed of Boston, who died in August, and stated that the vacancy thus caused would be filled by the appointment of Dr. Morris Piersol of Philadelphia.

REPORT ON QUESTIONNAIRE

An interim report on the questionnaire returns was presented by Lieutenant Colonel Lueth. It is expected that during September and October an adequately representative number of returns will be received, and a full report can be presented at the next meeting of the committee on October 28. The returns thus far received indicate that the first sampling of 1,000 presents a characteristic picture and thus has served well the purpose of a specimen or trial sampling.

REPORT ON EDUCATIONAL FACILITIES

Dr. Victor Johnson presented the material of a report on educational facilities required for returning medical officers, which he has prepared with Dr. F. H. Arestad. After considerable discussion of the statistics and comment offered by Dr. Johnson, it was voted that the chairman be authorized to appoint a committee to confer with the Surgeons General regarding places for study in the hospitals of the Army, Navy and civilian hospitals. The chairman designated Dr. Palmer, Dr. Johnson, Lieutenant Colonel Lueth and Father Schwitalla and, as chairman, Dr. Frederick A. Coller.

PROVISIONS FOR LICENSURE OF RETURNING OFFICERS

There appeared before the committee Dr. Barton of the Procurement and Assignment Service, Mr. Wheaton of the War Man Power Commission, Mr. Robinson of the Council of State Agencies and Mrs. Gallaher of the Department of Justice to solicit opinion on a proposal relating to the amendment of the medical practices acts of the states by adding the following:

"If an applicant presents evidence satisfactory to the board that he (1) has been graduated by a medical school reputable and in good standing as determined by the board, has been licensed by a state of the United States, (2) has served in the active military or naval service on or after Sept. 16, 1940 and prior to the termination of the present war as a commissioned medical officer of the Army or Navy and has been discharged or released therefrom under conditions other than dishonorable or has rendered medical service during the period 1940 to 1945 in industry or in a civilian community and (3) is of good moral character, the board in its discretion may issue him a temporary license for a period of time to be fixed in the license issued to practice medicine in this state without requiring that he pass any examination (including a basic science examination if that is a condition precedent to licensure) that otherwise he would be required to pass. An application for such a license shall be on a form approved by the board and shall be accompanied by such fee as is required for other licenses issued without examination."

This amendment is to become effective at once and is to remain in effect until the governor, on the recommendation of the state board of medical licensure, proclaims that this amendment is no longer necessary.

After discussion, the following resolutions were passed unanimously by the committee:

1. That the Committee on Postwar Planning announces its approval of the proposed legislation;

2. That the committee recommends that the Council of State Governments be requested to give active support to the proposed legislation in the various states;

3. That the committee recommends to state medical associations that they support such legislation and that such associations obtain the assistance of the Procurement and Assignment Service of the War Manpower Commission through its state representatives, and

4. That the committee recommends to state medical associations that they appoint liaison officers to correlate the efforts of those supporting this legislation.

ASSISTANCE TO MEN DISCHARGED FROM SERVICE

The chairman then asked Dr. Charles M. Griffith of the Veterans Administration to comment on public law 346, 78th Congress, relating to the provision of educational assistance to men after discharge from military service, since the interpretations and application of this law will be for the Veterans Administration to make. It was voted that the chairman appoint a subcommittee to confer and cooperate with the Veterans Administration, and for this purpose the chairman designated Dr. Coller, Dr. Palmer and Father Schwitalla.

RECOMMENDATIONS ON SURPLUS SUPPLIES

Dr Palmer reported that a committee of the National Research Council appointed to advise the War Production Board on the subject of essential drugs and supplies had prepared a series of recommendations which cover the measures to be taken in control of the disposal of surplus drugs, materials and supplies after the war. Dr. Palmer stated that the report is now in the committee stage of discussion by Congress but that it would be appropriate for some formulation of opinion to be expressed at this time.

It was voted that the recommendations in the report of this National Research Council committee be approved.

ORGANIZATION OF INFORMATION BUREAU

Dr. West reported that arrangements are being made for the organization of the Information Bureau at American Medical Association Headquarters as authorized by the Trustees of the American Medical Association.

WARTIME GRADUATE MEETINGS

In the absence of Commander Bortz, Dr. Borzell gave an account of the work of the Committee on Wartime Graduate Medical Meetings and requested an expression regarding its continuance after the cessation of hostilities, especially in the European theater of war. It was voted that the committee express its appreciation of the valuable work done under the direction of Commander Bortz and that a further report be requested at the next meeting of the committee.

October 28 was agreed on as being the time for the next meeting of the committee and the place Chicago.

ANNUAL CONFERENCE OF STATE SECRETARIES AND EDITORS

The Annual Conference of Secretaries of Constituent State Medical Associations and Editors of State Medical Journals will be held in Chicago at the offices of the American Medical Association on Friday and Saturday, November 17 and 18. Two sessions of the conference will be held on Friday, November 17, the first at 10 a. m. and the second on the afternoon of that day. On the evening of November 17 a program given over to the discussion of topics of particular interest to editors of the journals of constituent state medical associations will be presented at the Palmer House. The concluding session of the conference will be held at the offices of the Association on the morning of Saturday, November 18.

While these annual conferences have each year been attended by nearly all of the secretaries of constituent state medical associations and editors of medical journals of those associations, there has been a constantly increasing attendance of other officers of constituent state medical associations and officers of component county and district medical societies, and of late

years a very considerable number of members who do not occupy official positions have been present. The members of all those groups will be cordially welcome at the November conference.

All who expect to attend the conference this year are especially urged at the earliest possible time to make necessary arrangements for hotel accommodations and railroad transportation.

WASHINGTON OFFICE BEGINS ACTIVITY

On September 1 the Washington office of the Council on Medical Service of the American Medical Association began its activities. The office is located at 1835 I Street N.W. Dr. Joseph S. Lawrence, formerly representing the Medical Society of the State of New York in Albany, is in charge of this office. Any requests for assistance in relation to material available in Washington may be addressed directly to Dr. Lawrence. The activities of the office will be reported from time to time in THE JOURNAL.

AIR CONDITIONING

The Association's Committee to Study Air Conditioning maintains a compilation of pertinent bibliographic material with brief abstracts related to air conditioning for human comfort and health but not for industrial materials and products.

While this committee cannot undertake to furnish complete bibliographic material, it will furnish, without cost, to physicians and other professional personnel citations with minor abstracts on any one or any small number of the categories mentioned. This committee does not agree to pass on the merits of any air conditioning installation, nor can it furnish detailed plans for desired air conditioning in any operation. The material available is limited solely to citations to the world's literature on air conditioning in relation to human beings such as is available to the committee for review. Abstracting for the years 1942-1943 has just been completed.

The members of the Committee to Study Air Conditioning are Alvan L. Barach, Walter M. Simpson, C. P. Yaglou and Carey P. McCord, Chairman. Requests should be addressed to Carey P. McCord, M.D., 10 Peterboro Street, Detroit 1, Michigan.

This material is segregated in the following categories:

Air Analysis.
Air Cleaning.
Air Conditioning in Tropics.
Aircraft.
Air Flow, Air Circulation and Distribution, Air Movement.
Air Pressure, High.
Air Raid Shelters and Military Air Conditioning.
Allergy and Allergens.
Altitudes, High. Low Air Pressure.
Apparatus Breathing.
Bacteria.
Banks.
Charts and Tables.
Climate, Season and Weather.
Clothing.
Comfort and Comfort Zone.
Condensation.
Cooling Agents for Air Conditioning Refrigerants, General.
Cooling and Refrigeration. Summer Cooling.
Costs, Economics and Sales.
Dehydration.
Department Stores. Stores.
Design.
Ducts.
Dust Control.
Dust Determinations.
Education and Training.
Environment and Health.
Equipment.
Fans.
Fire Hazards.
Heat.
Heat Regulation (Temperature Regulation).
Heat Transfer.
Heating and Ventilation and Air Conditioning, General.
Heating, Radiant.
Homes and Apartment Houses.
Hospital Air Conditioning.
Hotels.
Humidity, Humidifying and Dehumidification.
Industrial Air Conditioning and Ventilation.
Instruments and Apparatus, Laboratory.
Insulation.
Ionization.
Laws, Standards and Codes.
Libraries and Museums.
Mines.
Miscellaneous Buildings and Structures.
Natural Infiltration.
Newspapers.
Noise and Noise Control.
Odors and Odor Effects, Air Freshness, Deodorization.
Office Buildings.
Operating Rooms (Hospitals).
Oxygen and Oxygen Therapy.
Ozone.
Personal Protective Equipment.
Physical and Physiologic Principles, General.
Pollution, Atmospheric, General.
Priorities and Rationing.
Progress and Future of Air Conditioning.
Public Buildings.
Railroads and Automobiles.
Respiratory Diseases.
Restaurants.
Schools.
Ships.
Sterilization of Air.
Temperature and Humidity Control.
Temperature Changes.
Temperature, Effective.
Tunnels.
Windowless Structures and Blackouts.

WASHINGTON LETTER

(From a Special Correspondent)

Sept. 18, 1944.

Hearings of Pepper Subcommittee on Wartime Health and Education

"Medical care for the people of the United States is not enough," Dr. Roger I. Lee, President-Elect of the American Medical Association and chairman of the Joint Committee on Postwar Medical Service, told the Pepper hearings on wartime health and education here. "It must be good medical care. Good medical care is based on good medical education, on medical research and on good medical communication." Dr. Lee declared that no doctor who graduated ten years ago can be a good practitioner solely on what he learned in medical school. Continuing medical education for the doctor is necessary, to be met only partly for most doctors by reading, perhaps by medical meetings, by long or short courses, or by long or short visits to medical centers and hospitals. "It is customary and accurate to state that the United States has the finest health record in the world. But that is not enough," he continued. "The practice of medicine in the United States is undergoing rapid change. We live in a changing world," Dr. Lee said. "Good roads, airplanes and other new devices will have a part in the changes in our lives and medical practice. Controlled scientific experimentation can, I think, be depended on to develop sound medical care for every one in the United States. This will require the cooperation of the government, the medical profession and the public."

On the subject of prepayment medical plans, Dr. Lee said some had been discarded as unsound, others had "folded up" as unsuccessful. While the insurance principle had a definite appeal, there were difficulties in its application. The insurance principle seemed to be working fairly but not altogether successfully in voluntary prepayment hospitalization plans. General prepayment sickness plans had similar success when the insured group was homogeneous, as in some industries or universities. General plans, he said, found great difficulties in the heterogeneous population of the country. Great Britain's national health insurance plan, so often quoted, has met great difficulties and has not resulted in furnishing medical service approaching the quality of medical care in the United States. Maintenance of the quality of medical care is fundamental in any health program, he said, declaring it was hard to improve the phraseology of a British recommendation: "There should be initiated, by arrangement and agreement between the government and the profession, organized experiments in the methods of practice, such a group practice, including health centers of different kinds, which should extend to general practitioners hospital units attached to general hospitals. Future developments in group practice should depend on the results of such clinical and administrative experimentation."

Dr. Lee elaborated on the report that 4,000,000 men had been rejected as physically disqualified for the armed forces. Standards of physical fitness had varied as the needs for manpower varied. The examinations were carried out by 33,000 physicians and 10,000 dentists who had served without remuneration. Some of the doctors boasted that they were "tough" and their personal interpretation of the standards had been tough, in the belief that all men should be fit for overseas combat service. Other examining doctors were lenient, and some soldiers they had passed were found unfit for training and were discharged. Rejections had been made for mental disease, mental deficiency, illiteracy and neurologic disorders. Dr. Lee felt that many in other categories could be made to meet standards and needs of the armed forces.

Dr. Lee said that to ascertain postwar plans of medical officers a questionnaire had been circulated with enthusiastic consent of the Surgeons General of the Army, Navy and Public Health Service. The Joint Committee was amazed at the large response and uniformity of answers to the questionnaire. Younger officers largely wanted to finish or supplement their training, older men wanted to get back to their practices, although some wanted short refresher courses. The Joint Committee, Dr. Lee said, was greatly concerned in the problem of disposal of surplus war supplies as they concern medical and hospital supplies.

Many returning medical officers will find their medical equipment obsolete or dissipated. Hospitals, having yielded to needs of the armed forces, require x-ray machines, surgical instruments, rubber gloves, and other supplies.

First witnesses at the resumed sessions of the Pepper Subcommittee on Wartime Health and Education were Dr. R. L. Sensenich of the Board of Trustees, American Medical Association, Dr. Harvey Stone, member of the Council on Medical Education and Hospitals, and Dr. Lee. Dr. Stone further elaborated on the reason for rejection of a large number of draftees by the various examining bodies functioning under the Selective Service law. The rejections had attracted wide attention and led to inferences and deductions that general public health was in a deplorable state. "I believe that a careful appraisal of the facts do not warrant the drawing of such conclusions," he said. Dr. Stone said that, despite the withdrawal of about 55,000 doctors into the federal services through the war, a general breakdown of civilian medical care had not resulted. "This remarkably good record shows that, despite shortages in trained personnel, the public health services, such as the protection of the food and water supply, the maintenance of sanitary conditions, control of infectious diseases and, more particularly, the care of the sick, are still operating efficiently," he said. Dr. Stone recommended a change in the attitude of Selective Service to assure a continuous supply of medical school graduates. He also saw benefits accruing from a well thought out and soundly organized program for hospital and laboratory facilities in areas now inadequately supplied.

Hearing on the Physically Handicapped

American Medical Association statistics on the number of hard of hearing persons in the United States were submitted to the Kelley hearing on the Physically Handicapped here this week. Alan B. Crammatte of the American Federation of Physically Handicapped, Inc., quoted the figures showing an overall total of some 5,500,000 deaf persons, with about 3,000,000 children affected in some degree and between 60,000 and 100,000 totally deaf. Mr. Crammatte was one of several witnesses who charged that educational facilities for deaf and hard of hearing children in the country are wholly inadequate both in teaching personnel and in equipment.

The American Medical Association was to have been represented at the hearings by Dr. Walter Hughson, director of the Abington (Pa.) Memorial Hospital, but Dr. Hughson was taken seriously ill in Washington and was unable to attend the sessions. Two medical witnesses were Dr. Harry Best of the University of Kentucky, Lexington, author of books on the subject, and Dr. Robert West, professor of speech pathology, University of Wisconsin, Madison. While Dr. Best's testimony did not touch to a great extent on the medical aspects of the question, he expressed pleasure that the federal government was taking an interest in the welfare of the deaf. Employers generally were unaware of what the deaf can do. He advocated more publicity and proposed that each state have a person to advise the deaf and employers alike, to their mutual advantage. Dr. Best expressed the opinion that there are 5 deaf per 10,000 in the country on the basis of census reports. He said that 60 per cent of the afflicted are congenitally deaf, 27 per cent are deaf before 3 years of age and 13 per cent later. Deafness, he indicated, was a problem both of childhood and of old age. He reported Wisconsin plans to set up centers in the state where the hearing loss of each individual will be estimated and help will be given in selecting a hearing aid.

Criticism of the federal government employment policies in regard to deaf and hard of hearing elicited an official statement from the Civil Service Commission that it had surveyed 3,500 types of jobs and found that 1,200 of them could be handled by totally deaf persons and 3,200 by hard of hearing. The commission reported that since October 1942 the government had hired 3,000 hard of hearing and 1,500 totally deaf persons.

Among witnesses at the hearings for the deaf were Miss Elizabeth Withers, American Occupational Therapy Association, Washington; Edmond Boatner, American School for the Deaf, West Hartford, Conn.; Ben M. Showe, National Association of the Deaf; Raymond H. Greenman, managing director, American Society for the Hard of Hearing; Miss Josephine Timberlake, executive secretary, Volta Bureau; Paul A. Strachan, president, American Federation of the Physically Handicapped, and Rev. Herbert C. Merrill, president, Gallaudet College Alumni Association.

Representative Augustine B. Kelley (Democrat, Pennsylvania) reported that further hearings of his committee on the physically handicapped will be held in New York on October 2-4, in Pittsburgh on October 17 and 18 and in Detroit on October 19 and 20. Mr. Kelley has expressed to Dr. Olin West, Secretary of the American Medical Association, his gratitude for cooperation rendered in the hearings by the American Medical Association and for publicity in THE JOURNAL, which he said had resulted in valuable material being sent directly to the committee.

MEDICAL ECONOMIC ABSTRACTS

ANOTHER COMPULSORY SICKNESS INSURANCE PLAN

The Subcommittee on Medical Care of the Committee on Administrative Practice of the American Public Health Association has submitted a "preliminary report" on the national program for medical care. This report appears in the September 1944 issue of the *American Journal of Public Health* (p. 984). The program suggested follows closely the recommendations of the International Labor Organization on Sickness Insurance already described in THE JOURNAL.[1]

The similarity is shown in the following selection from the preliminary report of the Subcommittee on Medical Care:

> A national program for medical care should make available to the entire population, regardless of the financial means of the individual, curative services.
>
> Services should be adequately and securely financed through social insurance supplemented by general taxation, or by general taxation alone.
>
> The public health agencies—federal, state and local—should carry major responsibilities in administering the health services of the future.
>
> The agency authorized to administer such a program should have the advice and counsel of a body representing the professions, other sources of service and the recipients of services.

There is more of a similarity to the Wagner-Murray-Dingell bill than is found in the original recommendations of the International Labor Office in that the public health department is proposed as the administrative agency and that the role of the medical profession is reduced to representation in an advisory commission.

The members of the subcommittee submitting the report are Joseph W. Mountin, M.D., chairman, Earle G. Brown, M.D., David D. Carr, M.D., Edwin F. Daily, M.D., Graham Davis, I. S. Falk, Ph.D., J. Roy Hege, M.D., Hugh R. Leavell, M.D., Emory Morris, D.D.S., George St. J. Perrott, Marion G. Randall, R.N., Edward S. Rogers, M.D., and Nathan Sinai, D.P.H.

1. J. A. M. A. **12**: 32-33 (Sept. 2) 1944.

PROGRESS OF MEDICAL SERVICE PLANS

Medical-Surgical Plan of New Jersey.—The first contracts were issued in July 1942. It serves the state of New Jersey and offers both medical and surgical contracts. On Dec. 31, 1943 it had a total membership of 7,334 males and 8,681 females, including both subscribers and dependents. During 1943 it had an income from subscribers of $74,498.47, expended $67,348.46 and accumulated a surplus of $12,201.35.

California Physicians' Service.—This was organized in 1939 and serves the state of California. On March 31, 1944 it had contracts covering 38,990 males and 53,010 females, making a total of 92,000. Its income to the date mentioned was $1,280,054.03; disbursements amounted to $1,206,401.39, leaving a net gain of $73,652.64. It now has a stabilization fund of $90,165.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ALABAMA

Personal.—Dr. Frank M. Hall has resigned as director of the Limestone County Health Unit in Athens to organize a similar unit in Gainesville, Fla., it is reported.

Condemnation Proceedings Started for Medical School Site.—Condemnation proceedings have been started on four square blocks between Sixth and Eighth avenues, south, and Eighteenth and Twentieth streets, Birmingham, to provide a site for the new University of Alabama School of Medicine (THE JOURNAL, March 4, p. 658, and April 22, p. 1212). Plans are under consideration to merge Hillman and Jefferson hospitals under the Jefferson Hospital roof, which would leave Hillman Hospital vacant. Tentative plans include using the vacant building as temporary administrative offices for the four year medical school.

CALIFORNIA

Fund for Tropical Medicine.—The Columbia Foundation of San Francisco has given $13,800 to assist in the establishment of a department of tropical medicine at the University of California Medical School, San Francisco, it is reported.

Tuberculosis Control in the State Hospitals.—The state department of public health is cooperating with the state department of institutions in a program of tuberculosis case finding in state hospitals. A mobile x-ray unit will be used in the project. X-ray examinations have already been completed of most of the patients in Patton State Hospital, Patton. A similar program will be undertaken in the Folsom State Prison, which, according to *California's Health*, will be the first tuberculosis x-ray survey of a California state prison.

Medicine to Benefit in Appropriations for Postwar Planning.—More than $27,000,000 will be expended by the University of California in a building program to be undertaken after the war. The legislature has already appropriated several million dollars for the work, which includes new buildings and expansion programs for medical and public health projects. At Los Angeles the proposed projects will include the student health center, $450,000; student hospital, $600,000; life sciences, $1,000,000. In San Francisco more than $6,000,000 will be spent, $4,000,000 to finance a teaching hospital, $1,000,000 for medical science, $500,000 for a nurses' home, $200,000 for interns' quarters and $100,000 for a dental clinic.

DISTRICT OF COLUMBIA

Annual Scientific Assembly.—The Medical Society of the District of Columbia will hold its annual scientific assembly at the Mayflower Hotel, Washington, October 5-7, under the presidency of Dr. Fred R. Sanderson. The program is presented as a preview of postwar medicine and includes the following speakers:

Dr. Robert H. Williams, Boston, Thiouracil Treatment of Thyrotoxicosis.
Dr. Lothar B. Kalinowsky, New York, Electric Convulsive Therapy in Psychoneuroses.
Lieut. Howard M. Odel (MC), The Future of Our Coronaries.
Louis L. Williams Jr., medical director, U. S. Public Health Service, The Malaria Problem.
Dr. Howard F. Root, Boston, Diabetes Tomorrow.
Dr. Frank H. Lahey, Boston, Biliary Tract Surgery.
Lieuts. C. Hunter Shelden and Robert H. Pudenz (MC) and Lieut. Comdr. Joseph S. Restarski (DC), Direct Observation of the Brain Under Physiologic Conditions.
Dr. George P. Muller, Philadelphia, Regional Ileitis.
Dr. James Ross Veal, Management of Venous Thrombosis.
Comdr. George W. Christiansen (DC), Oral and Plastic Surgery.
Brig. Gen. Fred W. Rankin, M. C., Surgery in the Forward Echelon.
Drs. John Tilden Howard and Arthur M. Shipley, Baltimore, Inflammatory Lesions of the Lower Gastrointestinal Tract.
Dr. Frank E. Adair, New York, Cancer of the Breast.
Lieut. Comdr. Francis S. Cheever (MC), The Dysenteries.
Norman T. Kirk, Surgeon General of the Army, Present Concepts of Military Surgery as Developed in the European Theater.
Dr. Frank W. Konzelmann, Philadelphia, Recent Advances in Laboratory Diagnosis.
Dr. Norman M. Scott, Trenton, N. J., Experiments in Medical Care.
Major Charles R. Brooke, M. C., Rehabilitation of Veterans.
Col. Leonard G. Rowntree, M. C., The National Program for Physical Fitness.
Major Henry B. Gwynn, M. C., Reconditioning in Civilian Hospitals.
Dr. Geza de Takats, Chicago, The Causalgic State in Peace and War.

Luncheon sessions during the meeting will be addressed by Commodore Arthur W. Clarke of the Royal Navy, who will speak on "Maintaining Morale in Fighting Men at Sea"; Major Gen. David N. W. Grant, the Air Surgeon, "Aviation Preventive Medicine," and William Mather Lewis, LL.D., president of Lafayette College, Easton, Pa. One feature will include a panel discussion on chemotherapeutic drugs with the following speakers: Dr. Chester S. Keefer, Boston, moderator; Lieut. Col. Michael E. DeBakey, M. C., Lieut. Comdr. Adolph M. Hutter (MC) and Lieut. Comdr. Edwin E. Barksdale (MC). There will be a panel discussion Saturday morning on the future of medicine with the following speakers: Dr. John P. Peters, New Haven, Conn.; Dr. Walter H. Judd, congressman from Minnesota; Ross T. McIntire, Surgeon General of the Navy; Claude D. Pepper, Senator from Florida; Thomas Parran, Surgeon General of the Public Health Service, and Dr. John H. Fitzgibbon, Portland, Ore.

INDIANA

Fellowship in Cancer.—Establishment at the Robert W. Long Hospital of the Indiana University Medical Center, Indianapolis, of a fellowship for the training of a pathologist in specialized diagnoses and research in cancer has been announced by the Indiana Women's Field Army of the American Society for the Control of Cancer. The Women's Field Army of Marion County, assisted by the state division, will provide also during the coming year for the sponsorship of the services of Miss Millicent Duckworth, medical center research worker, in the follow-up of cancer patients in the medical center and Indianapolis City Hospital clinics.

State Medical Meeting.—The ninety-fifth annual meeting of the Indiana State Medical Association, in conjunction with the army air force medical services, will be held at the Murat Temple, Indianapolis, October 3-5, under the presidency of Dr. Jacob T. Oliphant, Farmersburg. Among the speakers will be:

Dr. Paul H. Holinger, Chicago, Bronchoscopic Diagnosis of Bronchial Tumors.
Dr. Lillian B. Mueller, The Teaching of Anesthesia.
Major Gen. David N. W. Grant, the Air Surgeon, Medical Aspects of Pressurized Aircraft.
Dr. Newell C. Gilbert, Chicago, Functional Disturbances versus Organic Heart Disease.
Dr. Chester S. Keefer, Boston, Indications and Methods of Use of Penicillin.
Dr. Virgil S. Counseller, Rochester, Minn., Indications for Radical versus Conservative Treatment for Gynecologic Conditions.
Colonel Howard A. Rusk, M. C., New Horizons in Management of Convalescents.
Brig. Gen. Fred W. Rankin, M. C., Advances in Army Medicine.
Ross T. McIntire, Surgeon General of the Navy, Medical Aspects of Naval Warfare.
Dr. A. Jerome Sparks, Fort Wayne, Upper Urinary Tract Symptoms of General Interest.
Major Randolph L. Clark Jr., M. C., The Evolution of the Treatment of Pilonidal Cysts in Sinuses.
Dr. Eugene B. Mumford, Indianapolis, Bone Grafts—Review of 103 Cases.
Dr. Leo K. Cooper, Gary, Surgery of Trauma and Its Importance as an Emergency.
Major Dillon D. Geiger, M. C., Penicillin in Otolaryngology.
Major John G. Bellows, M. C., Penicillin in Ophthalmology.
Dr. Ralph M. Waters, Madison, Wis., Artificial Respiration.
Major Donald S. Thatcher, M. C., The Correction of Protein Deficiency by Amino Acid Therapy in the Management of Surgical Patients.
Dr. Charles N. Combs, Terre Haute, The First Nitrous Oxide Anesthesia Administered by Dr. Horace Wells, Dec. 11, 1844—A Memorial.

At the annual banquet, Dr. Frank H. Lahey, Boston, will discuss "Present and Postwar Medical Economic Problems." The program also includes Michael "Mickey" MacDougall, New York, on "Card Sharks versus Soldiers and Sailors."

MICHIGAN

Physicians Honored.—The Lapeer County Medical Society gave a dinner August 29 in honor of physicians who have completed fifty or more years in the practice of medicine. Among the guests were Dr. Frank A. Tinker, Lapeer, who has served sixty years, and Drs. David H. Burley, Almont, and Henry G. Merz, Lapeer, both of whom have completed fifty years in the practice of medicine.

Changes in Health Personnel.—Dr. Louis K. Peck has been appointed health officer of Crawford, Kalkaska, Missaukee and Roscommon counties with headquarters in Lake City. ——Dr. Douglas S. Fryer resigned August 11 as assistant director of the bureau of local health services, Michigan Department of Health, Lansing, to join the Wyeth Laboratories, Philadelphia. —— Dr. William A. Corcoran has been appointed health officer of Ishpeming, succeeding Dr. Neal J. McCann (THE JOURNAL, August 26, p. 1199).

Postgraduate Medical Conference.—On October 13 the University of Michigan Medical School, Ann Arbor, will conduct its annual postgraduate medical conference. Among the speakers will be:

Dr. Sture A. M. Johnson, Nevi of the Skin; Diagnosis and Treatment.
Dr. Gordon K. Moe, Circulatory Actions of the Veratrum.
Dr. Carl D. Camp, Postural Tension as a Cause of Pain.
Dr. Albert C. Furstenberg, Diseases of the Salivary Glands.
Dr. Cyrus C. Sturgis, Medical Treatment of Diseases of the Thyroid Gland.
Dr. Frederick A. Coller, Surgical Treatment of Diseases of the Thyroid Gland.
Dr. John Alexander, The Management of Benign and Malignant Intrathoracic Neoplasms.
Dr. Raymond W. Waggoner, Psychiatric Aspects of Chest Pain.
Dr. Norman F. Miller, Toxemias of Late Pregnancy.

MISSOURI

Annual Fall Clinical Conference.—The twenty-second annual fall clinical conference of the Kansas City Southwest Clinical Society will be held in Kansas City, October 2-4, at the Municipal Auditorium. Dr. Max Goldman, Kansas City, president of the southwest clinical society, will give the address of welcome. Among the speakers will be:

Dr. Frederic E. B. Foley, St. Paul, Management of Vesical Neck Obstruction.
Dr. Russell L. Haden, Cleveland, Treatment of Rheumatoid Arthritis.
Dr. Robert L. Jackson, Iowa City, The Management of Acute Rheumatic Fever in Children.
Dr. Frank H. Lahey, Boston, The Management of Surgical Lesions of the Terminal Ileum, Colon and Rectum.
Capt. Bruce V. Leamer (MC), Aviation Medicine—A Brief Review and Its Part in the Present War.
Dr. William F. Rienhoff Jr., Baltimore, Surgical Treatment of Lesions of the Biliary Tract.
Dr. Earl C. Sage, Omaha, Questions Arising in the Office Practice of Obstetrics and Gynecology.
Dr. Cyrus C. Sturgis, Ann Arbor, Mich., The Leukemias.
Dr. Owen H. Wangensteen, Minneapolis, Studies on the Origin and Treatment of Ulcer.

The guest speakers are scheduled for more than one topic for discussion. "The Newer Things in Medicine" will be considered in a round table discussion conducted by Dr. Ira H. Lockwood, Kansas City, Dr. Foley, Dr. Haden, Dr. Rienhoff, Dr. Sturgis and Dr. Wangensteen. At a joint evening session with the local county medical societies on Tuesday Dr. Lahey will discuss "Medicine Today, In and Out of the Service and After the War." The program also includes symposiums on gastroenterology, obstetrics, pediatrics, cardiovascular diseases, urogenital abnormalities and headache and backache.

NEW YORK

Commission Named to Study Care of Needy.—Dr. Basil C. MacLean, medical director of the Strong Memorial Hospital, Rochester, has been appointed head of a ten member commission requested by Governor Dewey to draft a program providing medical care for needy persons in the state, according to the Rochester *Democrat and Chronicle*, September 7. The commission, which has $40,000 for its work, was authorized by the 1943 legislature and results of its study are intended for use in formulating legislation for submission in 1945. The commission will make necessary studies to devise programs for medical care for persons of all groups and classes in the state of New York, Governor Dewey is reported to have said in a press interview. The commission was created after Governor Dewey told the legislature in his annual message last January that medical care for persons who cannot provide it for themselves was "one of the chief areas of unmet human need." Assemblyman Lee B. Mailler, sponsor of the bill, was designated by the governor as vice chairman of the group, although he is also an ex officio member. Other members of the commission include Dr. George M. Mackenzie, Cooperstown; Dr. Herman G. Weiskotten, Syracuse; Dr. Lucien M. Brown, Rev. John J. Bingham, Dr. Robert L. Levy and Garrard B. Winston, lawyer, all of New York City; Miss Ruth Hall, R.N., Buffalo; Miss Agnes Gelinas, R.N., New York, and Miss Marion W. Sheahan, R.N., Albany.

New York City

Cancer Foundation Seeks Funds.—On September 4 the National Foundation for the Care of the Advanced Cancer Patients, Inc., opened a campaign to raise $1,800,000 to provide beds and care in established institutions at low cost for incurable cancer patients. The campaign will be carried out under the direction of the foundation's executive committee, consisting of Julius J. Perlmutter, president; Dr. Frank E. Adair, president of the American Society for the Control of Cancer; Dr. Roscoe R. Spencer, director of the National Cancer Institute, Bethesda, Md., John W. Wingate of New York University; Morris M. Bernstein, treasurer; Morton Morrison, secretary of the foundation, and Mrs. Francis J. Rigney, commander of the Metropolitan area of the Women's Field Army of the New York City Cancer Committee. Organization of the foundation was announced in THE JOURNAL, May 20, page 221.

New Psychosomatic Clinic.—A psychoanalytic and psychosomatic clinic for training and research has been established in the department of psychiatry at Columbia University College of Physicians and Surgeons. The new clinic, said to be the first of its kind in the United States, is under the supervision of Dr. Nolan D. C. Lewis, executive officer of the department of psychiatry at Columbia University and director of the New York State Psychiatric Institute and Hospital. Dr. George E. Daniels, clinical professor of psychiatry, has been appointed chief of the psychosomatic service. The following additional appointments were announced: Dr. Sandor Rado, clinical professor of psychiatry, director of the clinic and chief of the psychoanalytic services for inpatients and outpatients; Dr. David M. Levy, assistant clinical professor of psychiatry and chief of the psychoanalytic service for children; Dr. Abraham Kardiner, assistant clinical professor of psychiatry and chairman of the seminar on comparative analysis of cultures. The new clinic is located at the Columbia-Presbyterian Medical Center and will be opened in October. Qualified physicians who are graduates of an approved medical school and have completed an approved hospital internship of not less than one year will be required to undergo a psychoanalysis in order to be admitted to the three year course of resident graduate training in psychoanalysis and psychosomatic medicine. The course of training includes a systematic program of lectures and seminars, clinical conferences and supervised clinical work on the psychoanalytic and psychosomatic services. It is combined with two years of resident graduate study in the other branches of psychiatry, with emphasis on the related basic medical sciences. Those who meet the requirements may register for the degree of doctor of medical science. On completion of an acceptable, original and previously unpublished dissertation on the laboratory or clinical aspects of the specialty and satisfactory completion of written, oral and practical examinations in related clinical and laboratory fields, the candidate may be recommended for the degree of doctor of medical science.

OHIO

Medical Society Observes Centennial.—The one hundreth anniversary of the Northwestern Ohio Medical Society will be held at the Elks Club, Findlay, October 3. A luncheon address will be delivered by Dr. Walter C. Alvarez, Rochester, Minn., on "Hints in the Recognition of Puzzling Abdominal Pain." Other speakers, members of the faculty of the University of Cincinnati College of Medicine, will be:

Dr. Marion A. Blankenhorn, The Toxic Reactions of the Newer Sulfonamides.
Dr. A. Ashley Weech, The Child Who Won't Eat.
Dr. Joseph A. Freiberg, Some Common Foot Disabilities in Children and Adults.
Dr. Leon Schiff, Tests of Liver Functions in Health and in Disease.
Dr. William A. Altemeier, Penicillin: The Management of Surgical Infections.

Dr. Wayland B. Recker, Leipsic, is president of the society and Dr. John M. Leahy, Tiffin, secretary.

Industrial Disbursements.—The Industrial Commission of Ohio disbursed $3,457,727.45 for medical services to injured Ohio workmen during 1943, according to the *Ohio State Medical Journal*. This figure includes a relatively small amount for dental services. Other expenditures during the year included $1,801,325, hospital care and nursing; $130,821.34, funeral expenses, and $97,001.18, court costs, a total of $5,486,874.97. These amounts include payments covering treatment of injured private and public employees as well as similar costs on occupational diseases and are in addition to death awards and compensation to injured workmen. Comparative figures for 1942 were $4,243,069.09 for medical services, $1,760,898.69 for hospital care and nursing, $133,104.41 for funeral expenses and $86,661.34 for court costs, a total of $6,223,733.53. The considerable decrease in 1943 of the amount disbursed for medical service is of no special significance, as a change by the auditing department of the Industrial Commission in the method of compiling records in 1942 resulted in the inclusion in the 1942 figure of approximately $800,000 of medical fees which had been allowed late in 1941 but were actually paid in 1942. The amount disbursed by the commission for medical service during 1941 was $3,322,792.06. The number of claims filed during 1943 was 331,072, a record for the thirty-two year history of the Ohio Workmen's Compensation Fund. There were 320,793 claims filed in 1942, the previous peak year. The total for 1932, during the depression, was 130,099. "Medical only" claims, involving payment for physicians' services but no compensation to the claimant for loss of time, num-

bered 260,150 in 1943, or 78.6 per cent of all claims filed, compared with 80 per cent in 1942. The average fee of "medical only" claims increased from $7.69 in 1942 to $7.88 in 1943.

PENNSYLVANIA

Philadelphia

Another Cancer Prevention Clinic.—On August 10 the International Cancer Research Foundation sponsored the opening of a cancer prevention clinic at the Jeanes Hospital, Fox Chase, under the direction of Dr. Elizabeth W. F. Love, medical director, and Dr. Hoke Wammock, medical chief of staff. This is the sixth of these clinics operating in Philadelphia at the present time (THE JOURNAL, August 26, p. 1200).

Changes at Woman's Medical College.—Recent changes on the faculty of the Woman's Medical College of Pennsylvania include the following appointments:

James O. Brown, Ph.D., to associate professor of anatomy and acting head of the department.
Dr. Ruth Hartley Weaver to acting associate professor of preventive medicine.
Dr. Francis H. Murray to clinical assistant professor of proctology.
Dr. Mary E. McKee Porter to assistant director of the clinical laboratory.

Promotions on the faculty include:

Gina Castelnuovo, Ph.D., to assistant professor of anatomy.
Dr. Helen M. Angelucci to clinical associate professor of gynecology.
Dr. Laura E. McClure to clinical associate professor of pediatrics.
Dr. Harriet M. Felton to clinical assistant professor of pediatrics.

UTAH

State Medical Election.—Dr. Ray T. Woolsey, Salt Lake City, was chosen president-elect of the Utah State Medical Association at its recent meeting in Salt Lake City, August 24, and Dr. Ezekiel R. Dumke, Ogden, was installed as president. Drs. Roy W. Robinson, Kenilworth, Horace Asa Dewey, Richfield, and John P. Burgess, Hyrum, were chosen vice presidents; Dr. David G. Edmunds, Salt Lake City, constitutional secretary, and Dr. Hyrum R. Reichman, Salt Lake City, treasurer. Dr. David P. Whitmore, Roosevelt, was named honorary president; Mr. W. H. Tibbals, Salt Lake City, was reelected executive secretary of the association. The 1945 meeting will be held in Ogden.

GENERAL

American Pediatric Society.—The fifty-fifth annual meeting of the American Pediatric Society will be held at the Hotel Claridge, Atlantic City, N. J., September 26-27, under the presidency of Dr. James L. Gamble, Boston. Included among the speakers will be:

Dr. William L. Bradford, Rochester, N. Y., Effectiveness of Sulfadiazine and Antipertussis Serum in the Treatment of Pertussis.
Dr. Stewart H. Clifford, Brookline, Mass., Clinical Significance of Yellow Staining of the Vernix Caseosa, Skin and Umbilical Cord in the Newborn.
Dr. Harriet G. Guild, Baltimore, Acute Idiopathic Porphyria with Repeated Attacks of Peripheral Neuritis: Treatment with Liver Extract.
Dr. Josef Warkany and Elizabeth Schraffenberger, Cincinnati, Congenital Malformations of Eyes Induced by Maternal Vitamin A Deficiency.
Dr. Daniel C. Darrow, Hamden, Conn., Intestinal Alkalosis.
Dr. Sidney Farber, Boston, Nature of Some Diseases Ascribed to Disorders of Lipid Metabolism.
Dr. Arild E. Hansen and Hilda F. Wiese, Ph.D., Minneapolis, Clinical and Lipid Studies on Child with Chylous Ascites.
Drs. L. Emmett Holt Jr. and Victor A. Najjar, Baltimore, Biosynthesis of Vitamins in Man.
Dr. Laslo Kajdi, Baltimore, Comparison of the Effect of Vitamin D and Citrates on Mineral Metabolism in Late Rickets.
Drs. Benjamin Kramer and Benjamin Philips, Brooklyn, Chemotherapy of Staphylococcus Aureus Infections in Infants.
Dr. Charles A. Weymuller, Brooklyn, Use of Sulfathiazole Ointment for Impetigo in Infants.
Drs. Milton Rapoport and Mitchell I. Rubin, Philadelphia, Influence of Sulfonamide Therapy on the Course of Acute Glomerulonephritis.
Dr. Charles Hendee Smith, New York, Self Feeding of Infants.
Dr. Julian D. Boyd, Iowa City, Clinical Significance of Head Size of Infants.
Dr. Ethel C. Dunham, Washington, D. C., Effect of Rickets in Infancy on the Pelvis in Adolescence.
Drs. Donovan J. McCune and Brunhilde Bruch, New York, Basal Metabolism of Children: Further Observations on Obese Children Which Suggest the Superiority of Standards Based on Weight.
Dr. Francis F. Schwentker, New York, Type Specific Vaccination Against Streptococcic Infections.
Drs. Joseph Stokes Jr. and Tzvee N. Harris, Philadelphia, Three Year Study of the Clinical Applications of Disinfection of Air by Glycol Vapors.
Dr. John A. Toomey, Cleveland, Attempts to Isolate Poliomyelitis Virus in Fish.
Dr. Irvine McQuarrie and Mildred R. Ziegler, Ph.D., Minneapolis, Metabolic Studies in a Case of Familial Periodic Paralysis.
Dr. Harry Bakwin, New York, Pseudodoxia Pediatrica.

On Wednesday there will be a symposium on "Crying of Newly Born Babies: Community Aspects" presented by Dr. C. Anderson Aldrich, Rochester, Minn.; Chieh Sung, Catherine Knop, Geraldine Stevens, R.N., and Margaret Burchell on Wednesday. The meeting Tuesday evening will be a joint session with the Society for Pediatric Research.

American Public Health Association.—The second wartime public health conference and the seventy-third annual business meeting of the American Public Health Association will be held at the Hotel Pennsylvania, New York, October 2-5, under the presidency of Dr. Felix J. Underwood, Jackson, Miss. Laboratory technic, epidemiology, industrial hygiene, school health, food and nutrition, vital statistics, dental health, public health education and maternal and child health will be among the various sessions, and speakers will include:

Major Walter P. Havens Jr., M. C., Dr. Robert Ward and Victor A. Drill, Ph.D., New Haven, Conn., Epidemiologic Studies on Infectious Hepatitis.
Howard J. Shaughnessy, Ph.D., and Frances I. Friewer, Chicago, Excretion of Typhoid Bacilli by Carriers: Comparative Value of Fecal and Bile Specimens in Their Detection.
S. Edward Sulkin, Ph.D., Dallas, Texas, The Effect of Environmental Temperature on Experimental Influenza in Mice.
Dr. Charles M. Carpenter, Rochester, N. Y., The Development in Vitro of Penicillin Faststrains of the Gonococcus.
Nathan Sinai, Dr.P.H., Ann Arbor, Mich., Scope, Administration and Financing of a National Health Service.
Icie G. Macy Hoobler, Ph.D., Detroit, Implications of Nutrition in the School Health Program.
Dr. Milton J. E. Senn, New York, The Influence of Psychologic Factors on the Nutrition of Children.
Drs. Guillermo Arbona and Pablo Morales Otero, San Juan, P. R., Public Health in the Tropics.

Raymond B. Fosdick, LL.D., New York, will deliver the third annual Delta Omega Lecture Tuesday evening on "Public Health as an International Problem." A special session Wednesday will be devoted to "Today's Global Frontiers in Public Health"; for South America, Major Gen. George C. Dunham, M. C.; for China, Dr. Szeming Sze; for Great Britain, Dr. Melville D. Mackenzie, and for the United States, Thomas Parran, Surgeon General of the Public Health Service. On Thursday morning there will be a demonstration of cooperative effort for health education of workers on the job in New York by:

Dr. Jacob H. Landes, The Plan of the Fort Greene Industrial Health Committee.
Louis Hollander, Organized Labor's Cooperation in the Plan.
Dr. L. Holland Whitney, Management's Cooperation in the Plan.
Kenneth D. Widdemer, Community Cooperation.
Dr. Charles F. McCarty, Organized Medicine's Cooperation.
Philip R. Mather, Role of the National Voluntary Agency.

Another session the same day will be devoted to "The Effect of War on Tuberculosis" with the following speakers: Godias J. Drolet, New York, "World War I and Tuberculosis"; Dr. James A. Doull, Cleveland, "Tuberculosis in England and Other Countries at War"; Mary V. Dempsey, New York, "Current Tuberculosis Statistics in the United States"; Col. Esmond R. Long, M. C., "Tuberculosis in the Armed Forces," and Herman E. Hilleboe, medical director, U. S. Public Health Service, "Small Film Radiography Among Industrial Groups." "Industry versus Venereal Disease" will be the theme of a program sponsored by the American Social Hygiene Association Monday evening, October 2. The session will be presided over by Dr. Victor G. Heiser, Bantam, Conn., consultant, committee on industrial health, National Association of Manufacturers, and speakers will include:

Mr. Reginald E. Gillmor, president, Sperry Gyroscope Company, Long Island, N. Y.
Dr. William L. Weaver, medical director, Du Pont Rayon Plant, Richmond, Va.
Mr. Abraham Bluestein, executive director, Labor League for Human Rights, American Federation of Labor.
Mr. Percy Shostac, consultant on industrial cooperation, American Social Hygiene Association.

Other groups meeting during the public health session will include, among others, the American Association of Public Health Dentists, the American School Health Association and the American Society for Research in Psychosomatic Problems.

FOREIGN

Personal.—Dr. Pasteur Vallery Radot, Paris, is the new French minister of health.

Physicians for India.—A program intended to train about 300,000 physicians over a period of about thirty years has been adopted by the health survey and development committee, set up by the government of British India under the reconstruction committee of the council, the New York *Times* reported August 28. The plan would provide at least one doctor for each thousand of the population, compared with the present ratio of about one doctor to 10,000. The scheme is to be developed and expanded every five years and the work completed in six stages, it was stated. Existing medical institutions would have to be enlarged and new ones established and a public health directorate with a network of provincial auxiliaries would be needed, it was said.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 19, 1944.

Whole Stomach Extract in the Treatment of Infantile Pellagra

From the Non-European Hospital at Johannesburg, T. Gillman and others report remarkable results in the treatment of infantile pellagra (*Nature*, August 12, p. 210). During the last three years nearly 300 children suffering from acute malnutrition have been admitted. More than 60 per cent of these manifested signs of infantile pellagra. The dominating features were edema of the limbs and, in severe cases, of the face, eyelids and genitals. The edema was associated with pellagrous skin lesions on the legs, buttocks, back, arms and face, gray hair or alopecia and patchy or diffuse dermal pigmentation. The stools as a rule were bulky, pale and foul smelling and contained much unsplit fat. The serum proteins were extremely low and there was a mild microcytic anemia. The liver was extremely fatty.

The unresponsiveness of this condition to vitamin therapy, including nicotinic acid, and a death rate of 90 per cent have been recorded by Trowell. It was therefore necessary to seek some other treatment. By improved liver biopsy Gillman and his group established that the microscopic appearances of the liver is a valuable method of assessing the severity of the condition. They studied 20 children by this method and treated them in three ways. They treated 7 with thiamine hydrochloride, nicotinic acid or brewers' yeast. Only 1 survived. Another 7 were given liver extract intramuscularly. Five survived and recovery was slow. Six were treated with 10 Gm. of desiccated hog's stomach and 10 cc. of tenth normal hydrochloric acid daily for five days. The response was dramatic: all survived. The loss of edematous fluid was shown by a fall in weight of 1 to 1½ pounds (450 to 675 Gm.) in twenty-four hours. The clinical condition remarkably improved, and the liver became almost free from fat in two weeks.

Whole extracts of hog's stomach have been occasionally used in the treatment of pellagra in adults with good results. In 7 severe cases in adults Gillman and his collaborators found the substance much more effective and rapid in its results than nicotinic acid and other vitamins. They draw the following conclusions: 1. Stomach extract is life saving in severe infantile pellagra. 2. It can be regarded as a lipotrope in view of its rapidity in depleting fat from the liver. 3. As both adults and infants respond to a single form of therapy there is no justification for regarding infantile and adult pellagra as different diseases.

Tuberculosis in Nurses

A survey of tuberculosis in nurses, organized by the Royal College of Physicians under the terms of a special bequest, has been carried out by Dr. Marc Daniels. It is the only survey of the sort in this country large enough to produce data of statistical value. The number of nursing entrants in the survey up to March 1943 was 3,764. Shortly after entry to the preliminary training school they were given Mantoux tests and x-ray examination. In the tests, 50.3 per cent were positive to old tuberculin 1 in 10,000 or 100,000, 30.5 per cent were positive only to 1 in 100 or 1,000 and 19.2 were negative. A change from negative to positive reaction (Mantoux conversion) in the first year took place in 58.4 and 78.3 per cent of two hospital groups respectively. Most of these nurses had no notable symptoms between the last negative and the first positive test. A study was made of the tuberculosis morbidity in nurses with a clear x-ray film on entry, disclosing that 33 cases occurred in 452 nurses initially Mantoux negative and 43 cases in 2,120 initially Mantoux positive. The annual case rate was 7.4 per thousand in nurses who were Mantoux positive on entry and 18.8 in those who were Mantoux negative.

The important fact emerges that tuberculous morbidity was two and one-half times higher in nurses who were Mantoux negative on entry than in those who were Mantoux positive. The explanation is that those who are Mantoux positive on entry are a selected population in whom primary infection has produced no perceptible lesion or who have recovered from a lesion. Therefore the percentage succumbing to infection will be lower in this group than in the Mantoux negative nurses, who are an unselected group. Special care must be taken of the young nurse who is Mantoux negative on entry. She should not be required to work in a ward set aside in a general hospital for tuberculous cases. X-ray examinations and tuberculin tests should be repeated at frequent intervals and particular care given if the test is found to be changing from negative to positive.

Color Film Record of Tongue Movements in Speech

A color film record of the tongue movements in speech, the first ever made, is described in *Endeavor*, the quarterly review of scientific progress published by Imperial Chemical Industries. The authors are a physiologist, Mr. J. Yule Bogue and Mr. Dennis Fry, who since 1939 has been occupied in research for the Royal Air Force into problems connected with the transmission and reception of speech signals. To make the film a man aged 72, whose tongue was exposed to view as the result of an operation involving removal of the right cheek, was used. A film record of the tongue movements was taken at the normal rate of twenty-four frames a second. A simultaneous record was made of the subject's speech. Thus it is possible to compare the pictures with the sounds corresponding to the tongue movements. The film sound track supplies a rough indication of the wave form of the sound that is being produced. In addition to these records made at normal speed, photographs were taken at high speed for frame by frame analysis in conjunction with cathode ray oscillograms of the speech taken at the time. The film is not only of scientific interest but also of assistance in speech therapy. It has been welcomed by the Air Force as a contribution toward the rehabilitation of flying men with facial injuries who have to be taught to speak again.

Vital Statistics

The remarkable fact that our vital statistics have improved during the war has been reported in previous letters to THE JOURNAL. The latest official figures for the quarter ended March 31 have just been published. They show a birth rate of 17.9 per thousand of population, which is the highest rate for the first quarter of the year since 1926. Thus there is some reversal of the declining birth rate, which was not sufficient for the maintenance of our population. Births exceed deaths by 37,941. The provisional infant mortality rate was 58 per thousand live births. This was 14 below the average for the preceding ten first quarters and the lowest on record. Marriages for the quarter numbered 62,599, lower by 12,972 than the average for the five years prior to 1943 but 8,338 higher than the corresponding first quarter average for the five years immediately preceding the war. The greatly increased marriage rate produced by the outbreak of war—which not only removed unemployment but gave family allowances to members of the fighting forces—could not be expected to continue at the same level.

PALESTINE

(From a Regular Correspondent)

JERUSALEM, Aug. 1, 1944.

Statistics on Physicians in Palestine

Second in a series of publications issued by the Central Bureau of Medical Statistics is a report of investigations carried on by Prof. R. Bacchi, in cooperation with Dr. Serolovitz, of Palestinean economic conditions with reference to physicians, both now and in the future, when the end of the war will create an entirely unprecedented situation. Interwoven with the problems of immigration and demobilization of physicians is the question of the necessity of establishing a faculty of medicine as part of the Hebrew University in Jerusalem.

The introductory chapter of the study deals with the peculiar structure of the medical profession in Palestine since 1921. At that time there were 129 Jewish physicians, or 23.6 per 10,000 Jewish inhabitants. At the same time non-Jewish physicians numbered 120, or 2.47 per 10,000 non-Jewish inhabitants. The further development may be seen in the accompanying table giving the percentages of Jewish and non-Jewish physicians in relation to the corresponding number of inhabitants. According to government statistics, the total number of physicians practicing in Palestine in 1941 was 2,244.

Physicians per 10,000 Inhabitants

	1922-24	1931-33	1934-36	1937-39	1940-42
Jews	23.6	21.9	45.1	44.1	45.9
Non-Jews....	2.47	2.18	2.25	2.44	

An analysis of the figures shows that in the non-Jewish population of Palestine the percentage of physicians has remained the same during the past twenty years (and is, moreover, one of the lowest in the world: United States [1942] 13.3, England [1932] 9.4, Switzerland [1938] 8.2, Finland [1936] 6.2).

For the Jewish population, the number of physicians in relation to the number of inhabitants was, even in 1921, double that of the international average, while by 1941 it had grown to twice as much. There is no doubt that the Jewish population of Palestine has an excess of physicians.

But what will happen if for any reason no influx of new physicians from abroad takes place and training facilities for physicians are not provided for in this country? For the coming ten or twenty years the present number of physicians will suffice for a population of three quarters of a million. After about twenty years a crisis may develop, and in 1972 practically all physicians will have disappeared. Such an event can naturally be forestalled by establishing a faculty of medicine at the Jerusalem University. An additional thirty-five physicians every year will suffice to meet the demand of the present Jewish inhabitants. The first group of fully trained physicians can be expected by the year 1953 if training is started in the near future.

Remittent Rural Fever (Febris Remittens Agricolarum)

According to data presented by Dr. J. Yatom in 1940, 245 inmates of the Mikveh Israel Agricultural School (218 students and 36 teachers) contracted an infectious disease of an outspokenly remittent character. The maximum temperature, 104 F., was recorded in the afternoon, this rise being accompanied by rigor, which subsided as soon as sweating set in. Occasionally elevation of temperature occurred during the night too. During the day the temperature was normal but the patients complained of violent headache, particularly supraorbitally, and of pain in the muscles. Immediately after the temperature had reached its maximum the patients felt exceptionally well and ate with good appetite. This intermittent fever lasted from four to twelve days. The pulse rate inclined toward bradycardia. Even during the first few days the spleen was palpable, while the liver could be felt only occasionally. The blood was characterized by leukopenia, with relative increase in monocytes. Epidemiologically the following facts could be established: Contact or food infection could be ruled out. Sixty-two per cent of the students were recent immigrants to the country, while the majority of the remaining 38 per cent came from towns. Only a small number of children from rural areas contracted the infection, while agricultural workers from Turkey, Persia and Mesopotamia who were employed at the settlement were spared altogether. It seems probable, therefore, that immunity after earlier infection must be taken into consideration. There was no indication of transmission by insects. The probable carrier of the infection is a special type of microtus, since prior to and during the epidemic a great number of these field mice were found. It is assumed that the germ was present in the fields and in the harvest and reached susceptible persons through the skin.

Venereal Diseases Among the Jewish Population of Palestine

In an article by Dr. A. Dostrovsky and Dr. F. Sagher, the incidence of venereal diseases among the Jewish population of Palestine is discussed. The data published by the authors refer to inpatients as well as outpatients of the Hadassah University Hospital in Jerusalem, and it is pointed out that caution should be exercised in applying them to the country as a whole. Among the 116,276 patients registered at the dermatologic outpatient department during the years 1920-1942, there were 986 venereal cases, or an incidence of 0.85 per cent. Six hundred and twenty of the patients were suffering from syphilis, 355 from gonorrhea and 11 from ulcus molle. In Jews of Oriental origin venereal diseases were twice as frequent as in Ashkenazim. The highest figures recorded were those for the years immediately following the first world war (1920, 2.7 per cent; 1922, 1.7 per cent). In 1942 the figure dropped to 0.2 per cent. The war years 1939-1942 have "so far shown no increase, although a similar postwar peak should be expected this time too."

Although the study has the shortcomings of all venereal disease statistics, it has, on the other hand, the advantage of covering a period of twenty-two years, so that there is some justification in applying the result to the Jewish sector as a whole. It may be concluded that the incidence of venereal diseases among the Jews of Palestine is actually very low.

Marriages

ROBERT FREDERICK LAMAR, Kansas City, Mo., to Miss Hazel M. Swanson of New Bedford, Mass., in Brisbane, Australia, March 21.

WILLIAM CASPER KITE JR., Oklahoma City, to Miss Dorothy-Ann Havener of Middletown, N. Y., September 2.

DALE BRYAN PARSHALL, South Bend, Ind., to Miss Margaret Grace McDaniel in Pickens, S. C., August 5.

MARGUERITE PATRICIA MCCARTHY, Syracuse, N. Y., to Mr. Bertram James Brough of New York, July 11.

LEOPOLD A. SCHNEIDER, Ninety Six, S. C., to Miss Inez Jennings Holloway of Chappells, August 16.

LATHA MITCHELL DONALSON, Fayetteville, Tenn., to Miss Claudie May Taylor in Franklin, August 1.

ELLET HALLER DRAKE, Mobile, Ala., to Miss Frances Margaret Moyer at Spring Hill, August 15.

WILLIAM CHARLES GAUNTT, Rochester, Texas, to Miss Eugenia Tate of Kountze in July.

ROY YOUNG, Port Arthur, Texas, to Miss Evelyn Cravens of Chattanooga, Tenn., May 1.

Deaths

Joelle Cornelius Hiebert ✠ Lewiston, Maine; Boston University School of Medicine, 1923; clinical instructor of obstetrics at his alma mater from 1924 to 1931 and instructor of preventive medicine and first aid, Gordon Theological College, from 1929 to 1931; director of the Androscoggin County Tuberculosis Association; member of the American College of Hospital Administrators, American Hospital Association, American Protestant Hospital Association and the American Society for the Control of Cancer; a trustee and president in 1941-1942 of the New England Hospital Assembly; member and past president of the Maine Hospital Association; a member of the Boston Hospital Superintendents Club and the Maine Civilian Defense Committee; member of the advisory council of the Maine State Department of Health and Welfare; trustee of Oak Grove School, Vassalboro; on the editorial board of the *Journal of the Maine Medical Association;* resident physician and superintendent of the Medical Mission Dispensary from 1924 to 1931; since 1931 medical superintendent of the Central Maine General Hospital, where he died June 8, aged 51.

James Henry Taylor, Indianapolis; Indiana Medical College, Indianapolis, 1878; member of the Indiana State Medical Association; professor emeritus of pediatrics at the Indiana University School of Medicine; past president of the Indianapolis Medical Society; president of the board of trade of Indianapolis, 1915-1916; served as president of the Summer Mission for Sick Children and as a member of the Family Welfare Board; formerly a member of the board of aldermen; for many years visiting physician at the Indianapolis Orphans' Home; one of the founders and for many years president of the Arsenal Building and Loan Association; died July 23, aged 81.

David Powrie Maitland, Jackson, Minn.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1891; member of the Minnesota State Medical Association; past president of the Jackson County Medical Society; for over twenty years chairman of the board of health of Jackson; served as coroner of Jackson County; during World War I had been examining physician and a member of the Jackson County Draft Board; for many years also served on the United States Pension Board; examining physician for the local Selective Service Board during World War II; died June 25, aged 77, of coronary heart disease.

Alexander Alexion, New York; National University of Athens School of Medicine, Greece, 1897; died July 30, aged 71, of cerebral hemorrhage.

Oscar Henning Anderson ✠ Plum City, Wis.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1909; owner of the Plum City Hospital; died in St. Luke's Hospital, St. Paul, Minn., June 20, aged 60, of congestive heart disease with edema, hypertensive heart disease and pulmonary embolism.

James Eddy Arnold, Minneapolis; Rush Medical College, Chicago, 1917; formerly village health officer and school physician for Mountain Iron, Minn.; on the staff of the Minneapolis General Hospital, where he died July 17, aged 54, of coronary sclerosis and diabetes mellitus.

Frederick William Becker, Newark, N. J.; College of Physicians and Surgeons, New York, 1888; also a pharmacist; member of the Medical Society of New Jersey; formerly member of the city board of health; served on the staff of the Newark City Almhouse, Maplewood; died in the Presbyterian Hospital July 11, aged 83, of uremia and hypertrophy of the prostate.

Glenn A. Brandt, Palo, Iowa; Keokuk Medical College, College of Physicians and Surgeons, Keokuk, 1901; member of the Iowa State Medical Society; died in Shellsburg June 8, aged 71, of injuries received when the automobile in which he was driving was struck by a train.

Michael Joseph Buck, Wilkinsburg, Pa.; Jefferson Medical College of Philadelphia, 1872; Hahnemann Medical College of Philadelphia, 1876; died in the Western Pennsylvania Hospital, Pittsburgh, June 14, aged 92.

Judson Charles Cole, Emmett, Kan. (licensed in Kansas in 1901); at one time coroner of Atchison County; formerly on the staff of the Atchison, Topeka and Santa Fe Railway Hospital, Topeka; died June 25, aged 84, of uremia.

Edna Bowden Dayton, Remsenburg, N. Y.; Woman's Medical College of Pennsylvania, Philadelphia, 1913; died July 11, aged 66, of sinus heart block.

Charles A. Dimond, Keokuk, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1903; member of the Iowa State Medical Society; served as a member of the city council and for many years city physician; died June 11, aged 73, of chronic endocarditis.

William H. Douglass, Benton City, Mo.; Barnes Medical College, St. Louis, 1898; honorary member of the Missouri State Medical Association; died in Mexico May 1, aged 69, of arthritis.

Bishop L. Elam, Centralia, Okla. (licensed in Oklahoma under the act of 1908); served as mayor of Centralia; died May 8, aged 71.

Sidney A. Faulkner, Whitney, Texas; Louisville (Ky.) Medical College, 1890; died June 8, aged 77, of heart disease.

James Murray Fettes, Spencer, Iowa; Trinity Medical College, Toronto, Ont., Canada, 1904; died June 6, aged 64.

Arthur John Fletcher ✠ Danville, Ill.; Northwestern University Medical School, Chicago, 1909; member of the American Academy of Pediatrics; president of the Vermilion County Medical Society; veteran of the Spanish-American War and World War I; on the staffs of the Lake View Hospital and St. Elizabeth Hospital, where he died July 24, aged 65, of heart disease.

Archibald Whittington George ✠ Detroit; Baltimore Medical College, 1911; a charter member and formerly a director of the American Association of Industrial Physicians and Surgeons; chief surgeon of the Packard Motor Car Company for many years; on the staff of the Harper Hospital, where he died July 21, aged 60, of sarcoma of the left ureter.

Robert Marion Golson, Prattville, Ala.; University of Tennessee Medical Department, Nashville, 1891; member of the Medical Association of the State of Alabama; died July 15, aged 78, of arteriolar sclerosis.

Morton Guzy ✠ Bridgeton, N. J.; Medical College of Virginia, Richmond, 1939; served an internship at the Jewish Hospital in Philadelphia; secretary of the Bridgeton Hospital staff; died July 20, aged 29, of coronary thrombosis and diabetes mellitus.

Sherwood Ackler Haggerty, Richfield Springs, N. Y.; Albany Medical College, 1895; died June 15, aged 73, of lymphosarcoma.

John Arthur Lamb, Kalispell, Mont.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1898; member of the Montana State Medical Association; served during World War I; captain, medical reserve corps, U. S. Army, not on active duty; on the staff of the Flathead County Hospital; on the courtesy staff of the Kalispell General Hospital; city health officer and local registrar; died June 20, aged 70, of carcinoma of the liver and pancreas.

Morris Hallowell Layton Jr. ✠ Harrisburg, Pa.; Medico-Chirurgical College of Philadelphia, 1910; died in the Harrisburg Hospital June 4, aged 56, of cerebral hemorrhage.

Daniel Guy Leach, Tucson, Ariz.; Central College of Physicians and Surgeons, Indianapolis, 1901; died June 24, aged 65.

Joseph Levy, New Orleans; Medical Department of Tulane University of Louisiana, New Orleans, 1902; member of the Louisiana State Medical Society; for many years on the staff of the Charity Hospital; died July 8, aged 64.

Charles Patterson Marsh, Petersburg, Tenn.; University of Nashville Medical Department, 1909; served in France during World War I; died July 5, aged 61.

Jessie Laird Robb Marshall, New York; University of Birmingham Faculty of Medicine, England, 1924; physician at Teachers College of Columbia University and the Horace Mann-Lincoln School; lecturer on child health at Columbia University; died in St. Luke's Hospital July 19, aged 45, of peritonitis caused by a carcinomatous growth.

Flora Eva Frost Moody ✠ Springfield, Mass.; Tufts College Medical School, Boston, 1898; died June 26, aged 73, of cerebral hemorrhage, hypertension and osteoarthritis.

Julius Daniel Mueller, Flandreau, S. D.; Creighton University School of Medicine, Omaha, 1931; served an internship at the Dr. W. H. Groves Latter-Day Saints Hospital, Salt Lake City, Utah; on the staff of the Flandreau Municipal Hospital; coroner for Moody County; died June 29, aged 39, of injuries received when crushed by a truck.

Emil Alfred Muller, Glen Cove, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1898; died June 13, aged 67, of arteriosclerosis, hypertension and acute cardiac failure.

James Moffett Norris, Northampton, Mass.; Western Reserve University School of Medicine, Cleveland, 1935; served an internship at the Charity Hospital in Cleveland and the LaFayette Home Hospital in LaFayette, Ind.; captain in the medical reserve corps, U. S. Army; served on the staffs of Veterans Administration facilities in Lyons, N. J., Sunmount, N. Y., and Northampton; died July 15, aged 39.

Lovett E. Park, Columbus, Ohio; Eclectic Medical Institute, Cincinnati, 1889; formerly on the staff of the Institution for Feebleminded; died July 12, aged 81.

Robert Alex T. Patterson, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1900; died in the Philadelphia General Hospital in July, aged 67, of carcinoma of the lung.

Marcellus Leroy Peterson, Cincinnati; Eclectic Medical Institute, Cincinnati, 1899; served during World War I; lieutenant colonel in the medical reserve corps of the U. S. Army from Feb. 21, 1941 to Nov. 27, 1943, when he was relieved from active duty because of age; died in the Bethesda Hospital June 15, aged 66, of ruptured myocardial infarct with intrapericardial hemorrhage.

Alfred Noroton Phillips, Glenbrook, Conn.; College of Physicians and Surgeons, New York, 1883; member of the Connecticut State Medical Society; formerly an executive of the Phillips Chemical Company; a director of the Stamford Hospital, Stamford; died August 1, aged 88.

Leo Francis Pierotti, Memphis, Tenn.; St. Louis University School of Medicine, 1931; member of the Tennessee State Medical Association; served an internship and a residency in surgery at St. Mary's Group of Hospitals in St. Louis; formerly an intern, secretary and member of the staff at St. Joseph's Hospital, where he died July 15, aged 37, of coronary occlusion.

William Henry Pipes, Jackson, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1905; member of the Louisiana State Medical Society; died July 8, aged 66.

John Rogers Pollock ✠ Ardmore, Okla.; Chicago College of Medicine and Surgery, 1909; died June 28, aged 61.

Herbert Ellis Rodley, Chico, Calif.; College of Physicians and Surgeons of San Francisco, 1910; died in the Enloe Hospital July 5, aged 60, of cardiac decompensation.

Clement E. V. Sams, Haven, Kan.; American Medical College, St. Louis, 1894; died in June, aged 75, of coronary occlusion.

Richard Savine, Long Island City, N. Y.; Long Island College Hospital, Brooklyn, 1907; member of the Medical Society of the State of New York; died July 19, aged 67, of cerebral hemorrhage.

Bert D. Shedd, Arcade, N. Y.; Cleveland Homeopathic Medical College, 1898; member of the Medical Society of the State of New York; formerly mayor, school physician, county coroner and health officer; died July 18, aged 72, of coronary embolism.

Joseph Leslie Sherrick ✠ Monmouth, Ill.; Johns Hopkins University School of Medicine, Baltimore, 1914; fellow of the American College of Physicians; served an internship at the Massachusetts General Hospital, Boston, 1914-1915; on the staff of the Monmouth Hospital; trustee, Monmouth College; director of the Second National Bank and associate medical director of the Illinois Bankers Life Assurance Company; died July 28, aged 56, of heart disease.

Arthur Montell Smith ✠ Piedmont, Calif.; Cooper Medical College, San Francisco, 1899; an Affiliate Fellow of the American Medical Association; fellow of the American College of Physicians; formerly a member of the state board of medical examiners; during World War I served overseas as a captain in the medical corps of the U. S. Army; served as chief of medical service, Samuel Merritt Hospital, Oakland, where he died July 21, aged 72, of heart disease.

CAPT. PETER L. DEMETER
M. C., A. U. S., 1914-1944

Rose Marie Vastola Smith, Rome, N. Y.; University of Buffalo School of Medicine, 1924; served an internship at Buffalo City Hospital, Buffalo; formerly connected with the New York City health department; died in the Station Hospital, Rome Army Air Field, July 6, aged 48, of carcinoma.

William Adelbert Smith, Petersburg, Mich.; Cleveland Homeopathic Medical College, 1903; for many years member and president of the school board; served as village president and as village and township health officer; on the staffs of the Toledo Hospital, Toledo, Ohio, and the Mercy Hospital, Monroe; president of the H. C. McLachlin & Company State Bank; died July 9, aged 67.

Ulysses G. Spohn, Fairgrove, Mich.; Detroit College of Medicine, 1906; member of the Michigan State Medical Society; served on the staff of the Samaritan Hospital, Bay City; died in East Tawas July 22, aged 73, of coronary thrombosis.

Andrew Wilton Springs, Colp, Ill.; National Medical University, Chicago, 1905; formerly physician in charge of the Madison Coal Corporation Hospital in Dewmaine; died July 22, aged 75, of heart disease.

Harry Erskine Tatum, Brunswick, Mo.; Jefferson Medical College of Philadelphia, 1900; member of the Missouri State Medical Association; served as president of the Chariton County Medical Society; county coroner; for many years a member of the school board; died July 1, aged 67, of coronary embolism.

William J. Thompkins, Washington, D. C.; Howard University College of Medicine, Washington, 1905; formerly assistant health commissioner, department of hygiene and communicable diseases, Missouri State Board of Health; served as curator of the Lincoln University, Jefferson City; formerly superintendent of the Kansas City General hospital number 2, Kansas City, Mo.; recorder of deeds for the District of Columbia; died August 4, aged 66.

George Monroe Tolhurst, Atlanta, Ga.; International Medical Missionary College and Training School for Nurses, Atlanta, 1908; died in the Grady Hospital June 27, aged 68, of hypertensive cardiovascular disease.

Frank F. Tourner, Bloomington, Ind.; Kentucky University Medical Department, Louisville, 1899; member of the Indiana State Medical Association; died July 6, aged 85, of hypostatic pneumonia.

James Walter Van Blaricum ✠ Minneola, Kan.; Kansas City (Mo.) Medical College, 1901; for many years member of the school board; died June 4, aged 70, of bronchial asthma.

Fred Ellridge Varney, North Chelmsford, Mass.; Medical School of Maine, Portland, 1886; member of the Massachusetts Medical Society; past president of the Middlesex North District Medical Society; school physician for many years; on the staff of the Lowell General Hospital, Lowell; died June 8, aged 83, of coronary heart disease.

Robert Lee Walker, Crabtree, N. C.; Kentucky School of Medicine, Louisville, 1889; died in the Haywood County Hospital, Waynesville, June 28, aged 80.

James D. Woodley, Indianapolis; Baltimore University School of Medicine, 1891; died May 23, aged 76, of heart disease.

KILLED IN ACTION

Peter Leo Demeter, Webster, Mass.; Middlesex University School of Medicine, Waltham, 1938; served an internship at the Buffalo Columbus Hospital, Buffalo; commissioned a first lieutenant in the medical corps, Army of the United States, on Nov. 4, 1942; later promoted to captain; went overseas in 1943; took part in the North African campaign and the invasion of Sicily; killed in action in Italy, July 26, aged 30.

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

This report is based on studies by the Council and returns on questionnaires sent to medical officers by the Committee on Postwar Medical Service and analyzed by Lieut. Col. Harold C. Lueth, M. C., Surgeon General's Liaison Officer.

POSTWAR PLANNING

EDUCATIONAL FACILITIES REQUIRED FOR RETURNING MEDICAL OFFICERS

VICTOR JOHNSON, M.D., PH.D.
AND
F. H. ARESTAD, M.D.
Secretary and Assistant Secretary, Respectively, Council on Medical Education and Hospitals
CHICAGO

In November 1942 the Council on Medical Education and Hospitals took cognizance of the fact that medical educational facilities at the graduate and postgraduate levels would be severely taxed in the postwar period because many medical graduates were and would be entering military service with a minimum of training beyond the internship and would desire additional education after the war. At that time the Council embarked on a study of the required facilities to meet this future need. This project was reported to the House of Delegates in April 1943.[1]

In its first preliminary report on this study the Council estimated that ". . . with a normal civilian complement of 5,500 residents the approved hospitals may be called on to furnish a total of 12,000 or 13,000 residencies in the immediate postwar period."[2] The Council further concluded from its preliminary survey that ". . . it should be possible to develop the required twelve or thirteen thousand residencies."

In its report to the House of Delegates in April 1944, the Council stated[3] that "In the Council's planning for these postwar services it became clear early that we were working entirely on the probable available supply of educational opportunities. The question of demand for them was entirely unknown and will depend (in part) on what the men now in service will desire after the war."

THE SURVEY OF MEDICAL OFFICERS

This very problem was then being attacked by the Committee on Postwar Medical Service. This committee was established by the American Medical Association in collaboration with the American College of Physicians and the American College of Surgeons and also includes representatives of the Association of American Medical Colleges, the American Hospital Association, the Catholic Hospital Association, the Federation of State Medical Boards of the United States, the Procurement and Assignment Service, the Advisory Board for Medical Specialties and the Veterans Administration. A major project of this committee has been a study of the postwar educational desires of medical officers, being conducted with the cooperation of the Surgeons General of the Army, the Navy and the Public Health Service. A questionnaire on this (and other important) questions was devised and has now been mailed to every medical officer in the services. A pilot questionnaire was first sent to 3,000 officers selected at random, representing all age groups, all services and all theaters of operation. Analyses of the early returns[4] and a more detailed presentation of the educational plans of the first thousand of the officers replying[5] have been made by Lieut. Col. Harold C. Lueth.

The latter of these two reports, which appeared in the Forty-Fourth Annual Educational Number of THE JOURNAL by courtesy of the Committee on Postwar Medical Service, provides figures permitting preliminary estimates of the total postwar educational requirements of medical officers and civilian graduates. From these requirements must be subtracted the currently available facilities to indicate what further educational opportunities must be developed to meet the demand.

POSTWAR EDUCATIONAL DESIRES OF MEDICAL OFFICERS

The data in tables 1, 2, 3 and 6 are recapitulations of Lueth's figures.[5] Table 1 shows the distribution of officers replying according to year of graduation and the postwar educational desires. No further formal education was planned by 20.4 per cent of all officers replying. Some full time training was requested by 79.6 per cent. Of these 33.8 per cent desired six months or less training, which was classified as review or refresher courses, and 45.8 per cent desired more than six months' training in hospital house officerships. Excluding group 6 (the oldest officers) from whom the fewest replies were received, the replies indicate that with increasing age, on the one hand, there is an increasing tendency to anticipate either no future training or, at most, review and refresher courses when further education is desired. On the other hand, the younger graduates provide most of the requests for hospital training; nearly 60 per cent of such requests came from men who graduated in 1938 or later. These general trends might have been anticipated in advance, but the large totals are surprising, as is also the fact that nearly two thirds of those who graduated before 1930 also desire some further training.

TABLE 1.—*Postwar Educational Desires of the First 1,000 Medical Officers Replying to a Questionnaire Sent to 3,000 Medical Officers Selected at Random and Representing All Theaters of Operation and the United States*

Group Number	Dates of Graduation	Desire No Educational Training	Desire 6 Months or Less or Unspecified Period	Desire More Than 6 Months Training	Total Replies by Groups
1.....	1941-1943	4	41	119	164
2.....	1938-1940	21	38	148	207
3.....	1935-1937	39	82	69	190
4.....	1930-1934	63	79	80	222
5.....	1920-1929	60	82	38	180
6.....	Before 1920	17	16	4	37
Totals.....		204	338	458	1,000

Note: Since there were 1,000 replies, any figure can be converted to per cent of the officers replying by pointing off one decimal place: 161 becomes 16.4 per cent.

1. J. A. M. A. **121**: 1397 (April 24) 1943.
2. J. A. M. A. **124**: 40 (Jan. 1) 1944. Compare with estimates in the present report, page 255.
3. J. A. M. A. **124**: 1302 (April 29) 1944.
4. J. A. M. A. **125**: 558 (June 24) 1944.
5. J. A. M. A. **125**: 1099 (Aug. 19) 1944.

DURATION OF TRAINING DESIRED

Table 2 shows the number of courses of varying durations requested by the thousand men who replied. Some officers requested more than one course, since 796 men requested 970 courses. Such instances were more frequent in the shorter courses (average 1.34 courses per officer) than in the longer house officerships (average 1.13 requests per officer).

There was a relatively small number of specific requests for courses of two months or less. Over 60 per cent of the 452 requests for the shorter courses specified three to six months. Of the 518 requests for house officerships, 47 per cent were for nine months or a year, 32 per cent for two years and 21 per cent for three years or more. Almost all of those desiring three years graduated in 1938 or later. The average duration of the 518 house officerships requested was 1.73 years.

ESTIMATED REQUIRED EXPANSION OF HOUSE OFFICERSHIPS

An attempt is made in table 4 to arrive at a tentative estimate of the additional hospital educational facilities which will be required in all fields after the war by all officers seeking more than six months' training. Any such estimates are necessarily hazardous in the extreme, because of several unknown variables which might greatly modify the resulting figures. However, it is essential that an approximation be made at once to facilitate definitive planning.

TABLE 2.—*Number of Courses of Different Durations Requested by 796 of the 1,000 Officers in Groups 1 to 6 Replying to the Questionnaire*

	Short Courses Review or Refresher 6 Months or Less						Long Courses Internships, Residencies or Fellowships, More Than 6 Months					Grand Total, Short and Long Courses
Groups	1 Mo.	2 Mo.	3 Mo.	6 Mo.	Duration Not Given	Total	9 Mo.	1 Yr.	2 Yrs.	3 or More Years	Total	
Group 1 (1941-1943)	0	0	6	23	26	55	0	29	55	57	141	196
Group 2 (1938-1940)	0	4	18	21	16	59	5	67	56	39	167	226
Group 3 (1935-1937)	12	7	26	52	19	116	4	36	24	8	72	188
Group 4 (1930-1934)	11	8	24	46	17	110	17	48	23	5	93	203
Group 5 (1920-1929)	9	5	27	31	21	93	9	25	6	1	41	134
Group 6 (Before 1920)	1	0	3	5	10	19	0	4	0	0	4	23
Totals	33	24	108	178	109	452	35	209	164	110	518	970

Note: Since nearly 1,000 courses were requested, any figure can be converted into percentage of the courses requested by pointing off one decimal place: 196 becomes approximately 19.6 per cent. Note that one man may want 2 or more courses, since 796 men requested 970 courses.

INTERNSHIPS AND RESIDENCIES

Table 3 deals with requests for hospital house officerships of nine or more months' duration, classified according to the subject or field of medicine desired.

TABLE 3.—*Requests for Postwar House Officer Training of More Than Six Months' Duration from 458 Medical Officers of the 1,000 Who Replied*

Field in Which Training is Desired	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Total Groups 1 to 6 by Subjects
Anesthesiology	1	3	2	..	..	..	6
Dermatology and Syphilology	1	1	..	1	1	..	4
Hospital Administration	..	..	..	1	1	..	2
Internal Medicine	28	31	11	9	8	..	87
General Training	11	12	9	11	7	1	51
Neurological Surgery	3	..	1	..	..	..	4
Obstetrics and Gynecology	20	27	5	7	3	..	62
Ophthalmology	1	3	6	14	1	..	25
Orthopedic Surgery	5	6	3	2	1	..	17
Otolaryngology	3	4	4	13	3	..	27
Pathology	2	5	2	..	1	1	11
Pediatrics	5	9	1	1	2	..	18
Plastic Surgery	..	..	..	1	..	..	1
Psychiatry and Neurology	4	6	3	4	3	..	20
Public Health	..	1	1	..	1	..	3
Radiology	1	4	4	3	1	..	13
Surgery	52	53	17	23	7	2	154
Urology	4	2	3	3	1	..	13
Total courses by age groups	141	167	72	93	41	4	518

Note: Since nearly 1,000 (actually 970) courses were requested in this category and that of table 6, any figure can be converted into percentage of all courses desired by pointing off one decimal place: 518 becomes approximately 51.8 per cent.

Nearly 70 per cent of the 518 requests for internships and residencies were in the following four fields: surgery (30 per cent), internal medicine (17 per cent), obstetrics and gynecology (12 per cent) and general training, such as a mixed residency or "second year internship" (10 per cent). Less than 5.2 per cent of the internship and residency requests were for training in each of the remaining fields, and there were less than 1 per cent of the requests for work in each of the following subjects: neurosurgery, dermatology and syphilology, public health, hospital administration and plastic surgery.

In table 4, column A, is shown the total number of physicians certified by the American boards in the specialties to 1944. Column B is taken from the figures provided by Lueth's study.[5] Column C gives provisional estimates of the probable total number of all medical officers in the armed forces who will want more than six months' training. The figures in this column are twenty times the numbers of requests from the first thousand replies (column B) received from the 3,000 officers to whom the pilot questionnaires were sent. This estimate assumes (*a*) that there are 54,000 medical officers in the services, (*b*) that there was a fair sampling of the officers receiving the pilot questionnaire, (*c*) that about one fourth of those requesting training of this kind may be unable to carry out their plans, and (*d*) that nearly 10 per cent of the 2,000 medical officers to whom pilot questionnaires were mailed, but from whom replies had not been received at the time of tabulation, will take further training similar to that of the officers who replied. The last of these assumptions is probably the most seriously open to question and may later require considerable modification in the light of further returns on the questionnaires of the Committee on Postwar Medical Service. These are now being received at a rapid rate. All information received is being transferred at once to International Business Machine punch cards to facilitate further analysis.

It is of interest to compare the figures of column C with those of column A. An estimated 10,260 officers will seek more than six months of specialty training (but not necessarily certification) after the war. This is nearly one-half the total number of specialists (23,465) now certified by the American boards.

In column D are given the numbers of assistant residents, residents and fellows in the normal prewar year 1941. To obtain the total number of house officerships required, these prewar figures must be added to the estimated numbers of returning medical officers desiring training. This total is given in column E.

The house officer facilities available in 1943 are shown in column F. These currently existing places must be deducted from the total places required (column E) to arrive at a provisional estimate of additional facilities which must be developed, given in column G. Provided the basic assumptions made are reasonably accurate, it appears that nearly 10,000 additional residencies will be required for returning officers, should demobilization be rather rapid.

ures of column G should be adjusted to the assumption currently in vogue that demobilization will extend over some time.

If we assume that about one half of the medical officers will be discharged and will embark on their postwar educational plans during the first year after the war, a total of approximately 4,590 additional residencies (column H) will be required in addition to the 5,796 now available. Should medical officers in all categories be discharged in equal numbers every three months throughout a two year demobilization period, the numbers seeking hospital positions will be relatively small at first but will mount steadily for two years. Under these conditions the maximum figure will be reached toward the end of the second

TABLE 4.—*Additional Postwar House Officerships Required: Tentative Estimates*

Field in Which Training Is Desired	Column A Total Certified by American Board to 1944	B Numbers of Requests for Training	C Estimated Total Numbers from All Medical Officers	D Normal Prewar Numbers: Assistant Residents, Residents and Fellows in 1941	E Estimated Total Postwar Numbers (C Plus D)	F Approved Residencies, Assistant Residencies and Fellowships in 1943[1]	G Estimated Additional Postwar Facilities Required (E Minus F)	H Estimated Additional Facilities Required if Demobilization Extends Over 2 Yrs.
Anesthesiology	231	6	120	121	241	128	113	53
Dermatology and syphilology	680	4	80	78	158	82	76	36
General training[2]	.....	51	1,020	183	1,203	154	1,049	539
Internal medicine and subspecialties	3,263	84	1,680	1,126	2,806	1,297	1,509	669
Neurologic surgery	149	4	80	36	116	60	56	16
Obstetrics and gynecology	1,764	62	1,240	442	1,682	504	1,178	558
Ophthalmology	2,336	25	500	208	708	242	466	216
Orthopedic surgery	860	17	340	200	540	243	297	127
Otolaryngology	3,737	27	540	233	773	229	544	274
Pathology	1,012	11	220	332	552	311	241	131
Pediatrics	2,220	18	360	393	753	389	364	184
Physical medicine[3]	.....	3	60	5	65	5	60	30
Plastic surgery	160	1	20	8	28	6	22	12
Psychiatry and neurology	1,716	20	400	497	897	548	349	149
Radiology	2,012	13	260	250	510	281	229	99
Surgery[4]	2,342	154	3,080	1,007	4,087	1,161	2,926	1,386
Urology	983	13	260	137	397	156	241	111
Totals	23,465	513	10,260	5,256	15,516	5,796	9,720	4,590

Note.—Column B includes the courses requested by officers in all age groups (see table 3, last column). The total (513) is 5 less than total in tables 2 and 3 because Hospital Administration (2 requests) and Public Health (3 requests) were omitted. There are no specialty boards or approved residencies in these fields. Column C contains a tentative estimate for the desires of 54,000 medical officers. See discussion on page 254 for method of computation and variables which would modify the estimates Column H is the estimated number in the first postwar year, if one half of the medical officers are discharged in that year (C/2 + D − F).

1. J. A. M. A. **122**:1119 (Aug. 14) 1943.
2. This pertains to general hospital training independent of specialties in second year internships or mixed residencies; in columns D and F the figures 183 and 154 are for mixed residencies.
3. Included under Internal Medicine in table 3.
4. Includes Malignant Diseases, Thoracic Surgery, Traumatic Surgery and the subspecialty Proctology.

RATE OF DEMOBILIZATION

The Council on Medical Education and Hospitals has recognized[5] that "the rate of demobilization of medical officers will bear significantly on our planning for their postwar training." The estimates contained in table 4 must take this into account, since the additional 9,720 residencies (total of column G) and the total of 15,516 residencies for civilians plus discharged officers (column E) would apply provided all officers desiring such training were discharged within a few months, on conclusion of the war, which is not likely to happen. While the rate of demobilization cannot now be estimated with assurance, the figyear of demobilization. At that time a full 75 per cent of all discharged physicians seeking house officerships will be in such positions, which may require about 7,500 residencies in addition to the 5,796 now available.[6]

RESIDENCIES REQUIRED IN SPECIFIC FIELDS OF MEDICINE

Preliminary approximations to the number of hospital positions required in the various specialties are also given in table 4, column H. If our basic assumptions have been reasonably sound, it appears that an increase

6. The total estimated in this way, about 13,300, may be compared with the Council's estimate of January 1944,[1] when a figure of 12,000 or 13,000 was arrived at on the basis of the scanty information then available.

of about 80 per cent will be required during the first year in the total number of residencies and that the percentages of expansion of available places required in the various special fields may be about as shown in table 5. Not included in this table are the following subjects, in which relatively small numbers of officers

TABLE 5.—*Percentage Increase in Numbers of Postwar Residencies Which May Be Required: Tentative Estimates*

Otolaryngology	130%	Orthopedic surgery	50%
Surgery	120%	Pediatrics	50%
Obstetrics and gynecology	110%	Pathology	40%
Ophthalmology	90%	Radiology	35%
Urology	70%	Psychiatry and neurology	30%
Internal medicine	50%		

evinced interest: anesthesiology, dermatology and syphilology, neurologic surgery, physical medicine and plastic surgery. While some expansion of educational opportunities will be required in these fields, replies from more officers in the services are required to justify hazarding an estimate of the required additional facilities needed.

The field of "general training" requires special mention. In table 4 it is estimated that over 1,000 officers may seek such mixed residencies or second year internships. Although approved mixed residencies in noninternship hospitals numbered only 154 in 1943, it must be remembered that all internship hospitals are also approved for mixed residencies. There are now over 700 such hospitals providing nearly 8,000 internships in peacetime. There seems to be no doubt that these institutions will be capable of providing for the additional requirements for general hospital training.

FULL TIME REVIEW AND REFRESHER COURSES

Review and refresher courses were requested by 338 officers (table 1). The total number requested was 452 courses (table 2), varying in duration from one

TABLE 6.—*Requests for Postwar Review or Refresher Courses of Six Months' Duration or Less, from 338 Medical Officers of the 1,000 Who Replied*

Field in Which Training is Desired	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Total Groups 1 to 6 by Subjects
Anesthesiology	1	1	3	..	1	..	6
Dermatology and Syphilology	..	..	1	1	5	1	8
Hospital Administration	..	..	..	..	..	1	1
Internal Medicine	11	29	17	26	5	9	99
General Training	21	20	18	30	8	6	103
Neurological Surgery	1	..	..	2	1	..	4
Obstetrics and Gynecology	2	10	23	15	6	..	56
Ophthalmology	..	..	6	6	5	..	17
Orthopedic Surgery	1	1	3	2	..	..	7
Otolaryngology	2	1	3	4	4	..	14
Pathology	1	..	2	1	1	..	5
Pediatrics	2	1	5	2	5	1	16
Plastic Surgery	..	..	..	..	..	..	0
Psychiatry and Neurology	2	3	4	3	4	1	17
Public Health	..	..	..	1	1	..	2
Radiology	1	1		4	2	..	8
Surgery	10	10	18	20	24	4	86
Urology	..	..	1	2	..	..	3
Total requests by age groups	55	59	116	110	93	19	452

Note: Since nearly 1,000 (actually 970) courses were requested in this category and that of table 3, any figure can be converted into percentage of all courses desired by pointing off one decimal place: 452 becomes approximately 45.2 per cent.

to six months. The fields in which such training is desired are shown in table 6. The largest number of requests were for work in the same four fields which were most popular in the case of house officerships. Over 75 per cent of the requests were for the following subjects: general training (23 per cent), internal medicine (22 per cent), surgery (19 per cent) and obstetrics and gynecology (12 per cent). Less than 4 per cent of the requests were for work in each of the remaining fields of medicine.

Again, it is incumbent on us to try to translate the expressed desires of the first thousand officers who replied to the questionnaire sent to 3,000 physicians in the services into the probable demand from all medical officers after the war. This must be done now, even at the risk of seriously miscalculating, and an attempt at this is made in table 7. Recalculations will be made on the basis of the continuing studies of the Committee on Postwar Medical Services.

In this table are given the attendance and the number of courses at various full time postgraduate courses during the year 1943-1944, classified according to duration of training and the specialty or field of interest of the physician.

In the last column of table 7 is given the estimated total number of courses desired by medical officers in the fields indicated.[7] Expansion of presently available facilities is needed in all of the fields indicated. The most illuminating figures are those of the last two pairs of lines across the bottom of table 7, relating to the duration of the courses available and desired. In 1943-1944 over 90 per cent of the participating physicians were in postgraduate full time courses of one month or less duration. Yet over 90 per cent of the probable demands for short term training will be for courses of about two or more months. It appears that one of the most acute needs for expansion of postwar educational opportunities will be in full time review and refresher courses of two to six months' duration.

TRAINING IN THE BASIC MEDICAL SCIENCES

In the first 1,000 questionnaires returned there was an insignificant number of specific requests for further work entirely limited to the basic medical sciences. However, it must be recognized that sound advanced training in any of the medical fields requested by medical officers must include basic science instruction and review. In planning internships and residencies for returning physicians it is essential to incorporate appropriate work in biochemistry, bacteriology, physiology, anatomy and pathology. Too often, in the typical residency of peacetime, the clinical responsibilities of the physicians allowed insufficient time for such a well rounded educational program.

HOW CAN POSTWAR EDUCATIONAL NEEDS BE MET?

Meeting the requirements of returning medical officers for additional training is a serious responsibility which will require the continued joint efforts of the Committee on Postwar Medical Service, the Council on Medical Education and Hospitals, the Surgeons General of the Army, Navy and Public Health Service, hospitals approved for internships and residencies, the American boards in the medical specialties, medical schools, state licensing boards, the Veterans Administration, foundations, county and state medical societies, and every institution capable of providing advanced training to physicians.

On these physicians rests a large share of the responsibility for the quality of medical care to be provided the nation in the decades following the war. Many entered the services after an abbreviated internship.

7. These figures are twenty times those in the last column of table 6. See page 254 for discussion of the basis for this calculation. Note that table 7 omits estimates in hospital administration, neuro-surgery and public health.

Others recognize the need for further education to equip themselves to return to their former practices or to new locations in which they desire to work.

The Council on Medical Education and Hospitals of the American Medical Association recommends the following, to meet the educational challenge of the postwar period:

1. Every hospital approved by the Council for internships should review its present and potential facilities and be prepared on request to submit to the Council estimates of the additional physicians it can accommodate as house officers in general medical training without jeopardizing high educational standards.

2. Every residency and fellowship hospital approved by the Council and acceptable to the various American boards should be prepared to submit to the Council and the respective boards estimates of the additional physicians it can accommodate as house officers in already approved residencies, having in mind initially the required expansion estimated in table 5, as well as the necessity for preserving a high quality of training.

3. Every internship hospital not now approved by the Council for residencies should be prepared to report on such facilities it may possess as may warrant consideration for approval of residencies, particularly in those specialties requiring most expansion.

4. Every approved residency hospital which has not yet developed its educational programs to full capacity should consider the organization of additional residencies in specialties not yet approved by the Council.

5. Hospitals approved for house officer training should consider developing graduate externships to provide training of short duration to discharged officers not housed at the hospital but engaged in full time hospital work. Specialty boards should consider the feasibility of allowing credit for such graduate externships in the training requirements for certification.[8]

6. Schools engaged in undergraduate, postgraduate and graduate education, medical societies and foundations should plan especially to meet the probable demands for full time review and refresher courses of two to six months' duration.

7. All participating hospitals and schools should incorporate into all postwar house officer training appropriate work in the basic medical sciences, which will require close cooperation between hospitals, medical societies and medical schools.

8. Consistent with the demands of national security and the postwar military needs, plans for the demobilization of medical officers should provide for teachers required for the training of discharged officers to be demobilized before the prospective students.

9. Although it may be necessary to modify the estimates here published when further questionnaires have been returned from medical officers to the Committee on Postwar Medical Service, plans by all medical educational institutions for expanded postwar facilities should commence at once.

10. Full use for educational purposes should be made of the period between the surrender of Germany and that of Japan to provide training for as many officers as possible while still retained on active service.

The Committee on Postwar Medical Service and the Council on Medical Education and Hospitals are moving forward with this program to the end that a complete list of available facilities may be published as soon as possible.

TABLE 7.—*Officers Who Will Desire Full Time Review or Refresher Courses: Tentative Estimate*

Field of Training	Places Now Available in Short Full Time Courses: About 1 Mo.		About 2 Mo.		About 3 Mo.		3 to 6 Mo.		Variable Length		Total Available Places in Short Courses		Estimated Additional Places Required by Returning Officers
	No. of Physicians	No. of Courses	No. of Physicians	No. of Courses	No. of Physicians	No. of Courses	No. of Physicians	No. of Courses	No. of Physicians	No. of Courses	No. of Physicians	No. of Courses	
Anesthesiology	534	3	...	..	...	..	6	1	5	1	545	5	120
Dermatology and syphilology	55	2	...	..	...	1	...	..	41	10	96	13	160
Internal medicine	19,501	86	141	9	9	2	44	7	79	7	19,774	111	1,980
General training	2,334	21	43	4	8	1	...	..	73	5	2,458	31	2,060
Obstetrics and gynecology	115	7	26	7	10	2	8	1	...	..	159	17	1,120
Ophthalmology	235	11	85	10	...	..	33	2	...	..	353	23	340
Orthopedics	14	3	...	..	...	..	...	..	...	..	14	3	140
Otolaryngology	94	6	24	5	13	2	10	3	7	2	148	18	280
Pathology	.....	..	...	..	...	..	7	1	25	2	32	3	100
Pediatrics	270	9	21	3	...	..	...	..	...	..	291	12	320
Psychiatry and neurology	1,073	7	...	..	...	..	...	..	182	8	1,255	15	340
Radiology	17	1	13	2	8	1	...	..	16	2	54	6	160
Surgery	219	11	74	9	1,415	5	10	1	1	1	1,719	27	1,720
Urology	8	3	...	..	...	..	...	..	...	..	8	3	60
Total places now available: Numbers	24,469	170	427	49	1,463	14	118	16	429	38	26,906	287	
Per cent	90.9		1.6		5.5		0.4		1.6				
Estimated places required by medical officers: Numbers	650		480		2,160		3,560		2,180				
Per cent	7		5		24		40		24				

Note.—Part time courses (236 in number) which were given to 2,873 physicians in the year 1943-1944 are not included.

The figures given are for numbers of physicians accommodated in short courses in the year 1943-1944 and for the numbers of courses involved.

These preliminary estimates (bottom line and last column) of total postwar short courses required for medical officers were obtained by expanding the requests from 1,000 officers twenty times, as was done in column C, table 5. See discussion of this calculation in text, page 254. The horizontal totals in the last line exceed those of the vertical totals in the last column because the latter does not include estimates of required courses in hospital administration, neurosurgery and public health.

8. The American Board of Psychiatry and Neurology has already considered this plan, which was first suggested to the Council by that board.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the Examining Boards in Specialties were published in THE JOURNAL, Sept. 16, page 190.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Montgomery, Oct. 24-26. Sec., Dr. B. F. Austin, 519 Dexter Ave., Montgomery.

ARIZONA: * Phoenix, Oct. 3-4. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

ARKANSAS: * Little Rock, Nov. 9-10. Sec., Dr. D. L. Owens, Harrison.

COLORADO: * Denver, Oct. 3-6. Sec., Dr. J. B. Davis, 831 Republic Bldg., Denver.

CONNECTICUT: * *Medical. Written.* Hartford, Nov. 14-15. *Endorsement.* Hartford, Nov. 28. Sec. to the Board, Dr. Creighton Barker, 258 Church St., New Haven. *Homeopathic.* Derby, Nov. 14-15. Sec., Dr. J. H. Evans, Hartford 6.

DELAWARE: Dover, Oct. 10-12. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

DISTRICT OF COLUMBIA: * Washington, November. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington.

IDAHO: Boise, Jan. 8-11. Dir., Bureau of Occupational Licenses, Mrs. Lela D. Painter, 355 State Capitol Bldg., Boise.

ILLINOIS: Chicago, Oct. 10-12. Supt. of Registration, Department of Registration and Education, Mr. Philip Harman, Springfield.

INDIANA: Indianapolis, Jan. 3-5. Exec. Sec., Board of Medical Registration and Examination, Miss Ruth V. Kirk, 301 State House, Indianapolis 4.

IOWA: * Iowa City, Sept. 25-27. Dir. Division of Licensure and Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines.

KANSAS: Nov. 2-3 Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. Seventh St., Kansas City.

MAINE: Portland, Nov. 14-15. Sec., Board of Registration of Medicine, Dr. A. P. Leighton, 192 State St., Portland.

MARYLAND: *Homeopathic.* Baltimore, Dec. 1-3. Sec., Dr. John A. Evans, 612 W. 40th St., Baltimore.

MASSACHUSETTS: Boston, Nov. 14-17. Sec., Board of Registration in Medicine, Dr. H. Q. Gallupe, 413-F State House, Boston.

MICHIGAN: * Detroit, Sept. 25-27. Sec., Board of Registration in Medicine, Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.

MISSISSIPPI: Jackson, Oct. 16-17. Asst. Sec., Dr. R. N. Whitfield, Jackson.

MONTANA: Helena, Oct. 2-4. Sec., Dr. O. G. Klein, First Nat'l. Bank Bldg., Helena.

NEBRASKA: * Omaha, Sept. 26-28. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln.

NEW JERSEY: Trenton, Oct. 17-18. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO: * Santa Fe, Oct. 9-10. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

NEW YORK: Albany, Buffalo, New York and Syracuse, Oct. 16-19. Sec. Dr. R. R. Hannon, Education Bldg., Albany.

NORTH DAKOTA: Grand Forks, Jan. 2-5. Sec., Dr. G. M. Williamson, 4½ S. 3rd St., Grand Forks.

OHIO: *Examination.* Columbus, Sept. 26-29. *Endorsement.* Columbus, Oct. 3. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

PENNSYLVANIA: Philadelphia and Pittsburgh, Oct. 3-6. Acting Sec., Bureau of Professional Licensing, Department of Public Instruction, Mrs. Marguerite G. Steiner, 358 Education Bldg., Harrisburg.

RHODE ISLAND: * Providence, Oct. 5-6. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH DAKOTA: * Pierre, Jan. 16-17. Sec., Medical Licensure, State Board of Health, Dr. G. Cottam, Pierre.

TEXAS: Dallas, Nov. 15-17 and Dec. 19-21. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

WEST VIRGINIA: Charleston, Oct. 2-4. Commissioner, Public Health Council, Dr. John E. Offner, State Capitol, Charleston 5.

WYOMING: Cheyenne, Oct. 2. Sec., Dr. M. C. Keith, Capitol Bldg., Cheyenne.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

CONNECTICUT: New Haven, Oct. 14. Address State Board of Healing Arts, 250 Church Street, New Haven 10.

DISTRICT OF COLUMBIA: Washington, Oct. 23-24. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington.

FLORIDA: Gainesville, Nov. 4. Final date for filing application is Oct. 20. Sec., Dr. J. F. Conn, John B. Stetson University, DeLand.

IOWA: Des Moines, Oct. 10. Dir., Division of Licensure and Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines.

MICHIGAN: Ann Arbor and Detroit, Oct. 13-14. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

MINNESOTA: Minneapolis, Oct. 3-4. Sec., Dr. J. C. McKinley, 126 Millard Hall, University of Minnesota, Minneapolis 14.

NEBRASKA: Omaha, Oct. 3-4. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln.

NEW MEXICO: Santa Fe, Feb. 12. Sec., Miss Marion M. Rhea, State Capitol, Santa Fe.

OREGON: Portland, Nov. 4. Sec., Mr. C. D. Byrne, University of Oregon, Eugene.

SOUTH DAKOTA: Aberdeen, Dec. 1-2. Sec., Dr. G. M. Evans, Yankton.

TENNESSEE: Memphis and Nashville, Sept. 25-26. Sec., Dr. O. W. Hyman, 874 University Ave., Memphis.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: Statute of Limitations Does Not Begin to Run Until Discovery of Negligence.—In 1930 the plaintiff submitted to an abdominal operation in a hospital owned and operated by the Colorado Fuel and Iron Company. The operation was performed by two physician employees of the hospital, but whether the patient paid the hospital for their services or paid the physicians themselves directly the reported decision does not make clear. The patient suffered constant pain thereafter and was attended by various physicians. In October 1940 roentgenograms and fluoroscopes failed to indicate the presence of any foreign body in her abdomen, but a laparotomy performed later in the month revealed the presence in the abdomen of a large gauze pad, which the patient alleged was left there when the abdominal operation was performed. This, so the patient alleged, was the first notice that she had had that the physicians had been negligent in performing the abdominal operation in 1930. She sued the hospital, the two physicians who performed the operation in 1930 and a nurse who was in charge of the operating room at the time and assisted the two physicians in the operation. The nurse and the hospital moved to dismiss the action allegedly because the complaint failed to state a cause of action and because an applicable six year statute of limitations in Colorado barred suit. The defendant physicians moved to dismiss because of the bar of an applicable two year statute of limitations. The trial court dismissed the action with respect to all the defendants, and the patient appealed to the Supreme Court of Colorado.

The motion of the nurse, said the Supreme Court, was overruled by the trial court as to the contention that the complaint failed to state a cause of action against her but was sustained as to the contention that the applicable statute of limitations had run. We think the motion should have been sustained as to the first contention—namely, that the complaint stated no cause of action against her. It is not alleged in the complaint that the nurse was derelict as to any special duty with which she was charged, or that she was charged with any. According to the allegations of the complaint she was simply "assisting said surgeons" (referring to the physician defendants), and the presumption is that she was directed by them. Her negligence, if any, was that of the physicians or of the hospital.

The motion to dismiss filed by the hospital was sustained on the grounds that the complaint stated no cause of action against it and that the applicable statute of limitations had run. A hospital, a corporation as here, said the court, cannot be licensed to and cannot practice medicine. The relation between physician and patient is personal. That a hospital employs physicians on its staff does not make it liable for the discharge of their professional duty since it is powerless, under the law, to command or forbid any act by them in the practice of their profession. Unless it employs those whose want of skill is known, or should be known, to it, or by some special conduct or neglect makes itself responsible for their malpractice (and no such allegation appears in the complaint in this case), it cannot be held liable therefor. Hence the motion of the hospital to dismiss because the complaint did not state a cause of action against it was properly sustained. Its motion to dismiss on the second ground, namely, that the applicable statute of limitations had run, becomes immaterial.

The motion of the two physicians to dismiss the complaint as to them was sustained by the trial court on the ground that the applicable two year statute of limitations had run. This, in the opinion of the court, was error. The statute on which the defendant physicians relied, so far as here applicable, reads:

> No person shall be permitted to maintain an action . . . to recover damages from any person licensed to practice medicine . . . on account of the alleged negligence of such person in the practice of the profession . . . unless such action be instituted within two years after such cause of action accrued.

Much argument has been made, continued the court, on the question of whether it is the negligent act of the physicians or the resulting damage which fixed the date from which the statute of limitations begins to run. We ignore these arguments because that is not the point. The question here is: Does delay due to a patient's ignorance of the cause of a known injury stop the running of the statute when the patient has used every reasonable effort to ascertain the cause and has been frustrated solely by the concealment of the physicians concerned? In other words, under such circumstances, when did the cause of action accrue? There are certain recognized exceptions to the strict and literal construction of such statutes as that here in question, necessarily construed into them by the demands of simple justice and the necessity for evading constitutional conflicts. For instance, it would seem outrageous to deprive one of his right to sue when a superior law forbade suit, or require him to sue when good faith to his debtor forbade action. *Brooks v. Bates et al.*, 7 Colo. 576, 4 P. 1069; *Board of Com'rs of El Paso County v. Flanagan*, 21 Colo. App. 467, 122 P. 801. Do the facts before us constitute such an exception?

Cases involving the applicability of statutes similar to that here in question are numerous, the Supreme Court said, and not a few of them were actions against physicians for leaving a foreign substance in closed incisions. In most of these cases the exceptions are repudiated and the statute strictly construed. A shocking result of this doctrine is well illustrated by a New York case *Conklin v. Draper*, 229 App. Div. 227, 241 N. Y. S. 529; Id., 254 N. Y. 620, 173 N. E. 892, in which a physician performed an appendectomy and left arterial forceps in the wound when it was closed. Despite allegations that he knew of his negligence but failed to disclose it and that plaintiff did everything within reason to discover the trouble and succeeded only when a roentgenogram revealed it and a hasty operation was performed to save life, a two year statute had run and its bar was sustained. A notable "gauze pad case" comes from Alabama, where it was contended that the statute was tolled since the cause of action was concealed by the negligence, hence the malfeasance should be treated as a fraudulent concealment. The strict construction rule was applied but the opinion does recognize the rule that one may not take advantage of his own wrong. A careful reading of the case discloses that the real basis of the decision was the absence of allegations of diligence on the part of the plaintiff to ascertain the cause of his ailment after the performance of the operation in question. *Hudson v. Moore*, 239 Ala. 130, 194 Co. 147.

It is generally held, continued the court, that fraudulent concealment stops the running of the statute. 74 A. L. R. 1320. It is said this is necessary that one be not permitted to take advantage of his own wrong. *Reynolds v. Hennessy*, 17 R. I. 169, 20 A. 307, 23 A. 639. But in such case the defendant has committed two wrongs, the original negligence and the fraudulent concealment. Why permit him to take advantage of the first and apply the rule only to the second? We are not impressed with the reasoning which supports the materiality of fraud. The statute of limitations is enacted to promote justice, discourage unnecessary delay and forestall the prosecution of stale claims, not for the benefit of the negligent. It should not be construed to defeat justice. The negligence is equally damaging and the victim equally helpless regardless of the motive for concealment. This statute has exactly the same effect, in the opinion of the court, as would a contract of employment which provided that no action could be maintained against the physicians unless brought within two years from the date of the performance of the operation; that is on a par with a contract of insurance providing no recovery can be had unless notice be given within a specified time. Any excuse which would defeat such express contracts is equally effective to toll the statute and it is well settled in this jurisdiction that impossibility to give notice is such. *London Guarantee & Accident Co. v. Officer*, 78 Colo. 441, 242 P. 989; *United States Casualty Co. v. Hanson*, 20 Colo. App. 393, 79 P. 176.

The court then discussed the decision of the Court of Appeals of Maryland in *Hahn v. Claybrook*, 130 Md. 179, 100 A. 83, 86, L. R. A. 1917C, 1169, which, after reviewing with apparent acquiescence various authorities which deny the exception or limit it to other grounds, appeared finally unable to escape the logic and justice of the rule that a patient's lack of knowledge, due to no lack of diligence on his part but solely to a physician defendant's concealment, tolls the statute, and held flatly that "the statute began to run from the time of the discovery of the alleged injury."

It has been held, continued the court, that while generally a plaintiff's ignorance of the wrong committed cannot be considered in determining when the statute begins to run, an exception to this rule is made in cases of the concealment of the cause of action. There the bar of the statute does not operate until discovery, and it is said "This proposition is so fundamental that no authorities need be cited." *Johnson v. Chicago, M. & St. P. R. Co.*, D. C., 224 F. 196, 201. With this statement we agree. Certainly one should not be permitted to take advantage of his own wrong. Under the facts pleaded it was impossible for plaintiff to sue within the limitation and it is a recognized maxim that the law does not require impossibilities. A legal right to damage for an injury is property, and one cannot be deprived of his property without due process. There can be no due process unless the party deprived has his day in court and if without his fault a tort feasor conceals from him his right until a statute deprives him of his remedy he is deprived of due process. It is also an ancient maxim of the common law that "Where there is a right there is a remedy." What a mockery to say to one, grievously wronged, "Certainly you had a remedy, but while your debtor concealed from you the fact that you had a right the law stripped you of your remedy." Regardless of the number of authorities supporting the rule of strict construction, stated the Supreme Court, we disagree with them on reason and hold that this alleged cause of action against the physicians was not barred by the statute relied on.

For the reasons stated, the judgment of dismissal as to the physicians was reversed.—*Rosane v. Senger, 149 P. (2d) 372 (Colo., 1944).*

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Otolaryngology, Chicago, Oct. 8-12. Dr. W. L. Benedict, 102 Second Ave. S.W., Rochester, Minn., Secretary.

American Academy of Pediatrics, St. Louis, Nov. 9-11. Dr. Clifford G. Grulee, 636 Church St., Evanston, Ill., Secretary.

American Hospital Association, Cleveland, Oct. 2-6. Mr. George P. Bugbee, 18 East Division St., Chicago, Executive Secretary.

American Pediatric Society, Atlantic City, N. J., Sept. 25-27. Dr. Hugh McCulloch, 325 N. Euclid Ave., St. Louis 8, Secretary.

American Public Health Association, New York, Oct. 3-5. Dr. Reginald M. Atwater, 1790 Broadway, New York 19, Executive Secretary.

American Roentgen Ray Society, Chicago, Sept. 24-29. Dr. H. Dabney Kerr, University Hospitals, Iowa City, Secretary.

Association of American Medical Colleges, Detroit, Oct. 23-25. Dr. Fred C. Zapffe, 5 S. Wabash Ave., Chicago, Secretary.

Association of Military Surgeons of the United States, New York, Nov. 2-4, Col. James M. Phalen, Army Medical Museum, Washington 25, D. C., Secretary.

Colorado State Medical Society, Denver, Sept. 27-29. Dr. John S. Bouslog. 537 Republic Bldg., Denver 2, Secretary.

District of Columbia, Medical Society of the, Washington, Oct. 5-7. Mr. Theodore Wiprud, 1718 M St. N.W., Washington, Secretary.

Indiana State Medical Association, Indianapolis, Oct. 3-5. Mr. T. A. Hendricks, 23 East Ohio St., Indianapolis 4, Executive Secretary.

Inter-State Postgraduate Medical Association of North America, Chicago, Oct. 17-20. Dr. Arthur G. Sullivan, 16 N. Carroll St., Madison, Wis., Managing Director.

International College of Surgeons, U. S. Chapter, Philadelphia, Oct. 3-5. Dr. Desiderio Roman, 250 South 17th St., Philadelphia, Secretary.

Kansas City Southwest Clinical Society, Kansas City, Mo., Oct. 2-4. Dr. William M. Korth, 1115 Grand Ave., Kansas City 6, Mo., Secretary.

Michigan State Medical Society, Grand Rapids, Sept. 27-29. Dr. L. Fernald Foster, 2020 Olds Tower, Lansing 8, Secretary.

Midwestern Section of American Federation for Clinical Research, Chicago, Nov. 2. Dr. Richard H. Lyons, University Hospital, Ann Arbor, Mich., Secretary.

Mississippi Valley Medical Society, Peoria, Ill., Sept. 27-28. Dr. Harold Swanberg, 510 Maine St., Quincy Ill., Secretary.

Oklahoma City Clinical Society, Oklahoma City, Oct. 23-26. Dr. L. C. McHenry, 512 Medical Arts Bldg., Oklahoma City, Secretary.

Omaha Mid-West Clinical Society, Omaha, Nebraska, Oct. 23-27. Dr. J. D. McCarthy, 1036 Medical Arts Bldg., Omaha 2, Secretary.

Radiological Society of North America, Chicago, Sept. 24-29. Dr. Donald S. Childs, 607 Medical Arts Bldg., Syracuse, N. Y., Secretary.

Southern Medical Association, St. Louis, Mo., Nov. 13-16. Mr. C. P. Loranz, Empire Building, Birmingham 3, Ala., Secretary.

Virginia, Medical Society of, Richmond, Oct. 23-25. Miss Agnes V. Edwards, 1200 E. Clay St., Richmond 19, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1934 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

27:755-904 (June) 1944

Distribution of Potential of Ventricular Origin Below the Diaphragm and in Esophagus. J. D. Helm Jr., Grace H. Helm and C. C. Wolferth. p. 755.

Study of Methods of Making So-Called Unipolar Electrocardiograms. C. C. Wolferth and Mary M. Livezey.—p. 764.

Effects of Anterior Infarction Complicated by Bundle Branch Block on Form QRS Complex of Canine Electrocardiogram. F. F. Rosenbaum, H. Erlanger, N. Cotrim, F. D. Johnston and F. N. Wilson.—p. 783.

Coronary Occlusion, Coronary Insufficiency and Angina Pectoris: Clinical and Postmortem Study. A. M. Master, H. L. Jaffe, S. Dack and A. Grishman.—p. 803.

Electrocardiographic Changes in Uremia Associated with High Concentration of Serum Potassium: Report of 3 Cases. N. M. Keith, H. B. Burchell and A. H. Baggenstoss.—p. 817.

Continuous Intravenous Administration of Histamine: Effect on Electrocardiogram and Serum Potassium. G. A. Peters and B. T. Horton. —p. 845.

American J. Digestive Diseases, Fort Wayne, Ind.

11:205-240 (July) 1944

*Quantitative Study of Inhibitory Effect of Acid in Intestine on Gastric Secretion. I. J. Pincus, M. H. F. Friedman, J. E. Thomas and M. E. Rehfuss.—p. 205.

*Therapeutic Use of Amino Acid Histidine in Allergy and Shock—"Histidine as Factor in Histamine Epinephrine Balance." S. L. Ruskin.—p. 209.

Role of Fat Soluble Vitamins A and D in Nutrition: Requirements of Vitamin A. J. Buckstein.—p. 224.

New Test for Gastric Function. J. Nasio.—p. 227.

Effectiveness of Different Culture Mediums in Isolation of Enteric Micro-Organisms. E. R. Neter and Phyllis Clark.—p. 229.

Inhibitory Effect of Acid in Intestine on Gastric Secretion.—Pincus and his collaborators performed experiments on 3 dogs equipped with a Pavlov pouch of the stomach and on 1 dog with a Heidenhain pouch. They found that acid introduced into the small intestine of Pavlov pouch dogs inhibits gastric secretion in response to a meal, provided an adequate degree of intestinal acidity is attained. Great inhibition of secretion occurs if the p_H of the intestinal contents is about 2.5 and almost complete depression when the p_H is 2.0 or lower. The experiments point to the existence of a mechanism for the autoregulation of the gastric secretion which is brought into play when the acidity of the intestinal contents reaches levels which may be harmful to the intestinal mucosa. During the digestion of a meat meal by the dog the acidity of the duodenum near the pylorus is generally near p_H 4, while the content of the antrum of the stomach has a reaction between p_H 2.0 and p_H 3.0. The existence of a threshold level of intestinal p_H for inhibition of gastric secretion which these studies show to be within the p_H range of the antral contents is suggestive. One of the authors has suggested that the "receptive relaxation" of the duodenum which occurs when the stomach empties itself results in the accumulation of duodenal contents in the vicinity of the pylorus. Occurring at the moment of exit of the acid gastric contents, this would facilitate quick dilution and partial neutralization of the chyme (to about p_H 4.0). It may now be supposed that, should this neutralizing ability of the duodenal contents be ineffective, a second mechanism may be set into action, one which arrests the secretion of the acid at its source. The intestinal phase of digestion is believed to give rise to a corresponding intestinal phase of gastric secretion. The suggestion has been advanced that the intestinal phase of gastric secretion is normally regulated to some extent by the acidity of the intestinal contents. The results obtained by the authors cast doubt on this assumption. In the dog, at least, little inhibition of acid secretion occurs if the intestinal p_H is above 2.5. Acidities as great as this are rarely found in the dog's intestine. The authors regard this mechanism as one which is set into action only during emergencies when other means of reducing the acidity of the intestinal contents have failed. The possibility remains that in man the threshold is higher than p_H 2.5, which would explain the results of Griffiths and Shay et al., who used less concentrated solutions of acid. The inhibition observed in these experiments may be due to enterogastrone; the intestinal instillation of acid failed to inhibit the gastric secretion provoked by histamine.

Histidine in Allergy and Shock.—Ruskin experimented with a viable section of a bronchiole from rabbit lung obtained according to a slightly modified technic of Sollmann and Gilbert. The purpose of the experiment was to produce contraction of the bronchiole by adding histamine hydrochloride to the Ringer-Locke-dextrose solution to obtain a 1:50,000 concentration. After the contraction due to the histamine was established, and at a fixed interval, the substance to be tested for histamine antagonism was added. It was demonstrated that vitamin C has slight histamine antagonism in itself, but when serving as the acid radical for calcium, ephedrine, amphetamine or epinephrine it enhances their histamine antagonism and bronchiole dilating capacity. This is important in increasing respiratory ability. Calcium gluconate not only did not antagonize histamine hydrochloride but actually increased contraction of the bronchiole to the drug. Calcium ascorbate, on the other hand, antagonized histamine, and the response was quicker than that to either vitamin C alone or sodium ascorbate. This is significant in view of the conflicting claims made for calcium in the treatment of asthma. The synergistic effect of vitamin C on calcium may be the all deciding factor in the therapeutic value of calcium in allergy. Calcium gluconate may produce unfavorable results in the treatment of asthma, while calcium ascorbate may be useful. While amphetamine ascorbate produced a quick recovery from histamine contraction, with strong histamine block, the amphetamine sulfate showed no histamine antagonism and in fact prolonged histamine contraction. The implications of this experiment may be important in relation to histamine shock. While amphetamine sulfate can keep a soldier alert, it may predispose him to greater histamine shock, whereas the vitamin C salt may protect against histamine shock. The epinephrine ascorbate showed about twice the bronchiole dilating capacity exerted to epinephrine hydrochloride and a much quicker and more active histamine antagonism. The amino acids histidine and tyrosine, supplemented by methionine and choline, serve as fundamental factors in the balance between histamine and epinephrine. The author arrives at the following conclusions: (1) Therapeutic usefulness of the amino acid histidine is indicated in allergic and related conditions; (2) histidine is antagonistic to histamine and plays an important part in histamine-epinephrine balance in shock; (3) histidine produces a feeling of well being and energy that could be useful in the care of postoperative patients and the treatment of shock. Further study of histidine enrichment of parenterally administered protein hydrolysates as blood substitutes is being conducted.

Endocrinology, Springfield, Ill.

34:353-432 (June) 1944

Effect of Thyroid Treatment on Respiration of Various Rat Tissues. E. S. Gordon and A. E. Heming.—p. 353.

Diabetogenic Effect of Diethylstilbestrol in Adrenalectomized-Hypophysectomized-Partially Depancreatized Rats. D. J. Ingle.—p. 361.

Removal of Exogenous Estrogens from Circulation. A. E. Rakoff, A. Cantarow, K. E. Paschkis, L. P. Hansen and A. A. Walkling.—p. 370.

Response of Intraocular Endometrial Implants to Estrogens in Female Rabbit. E. M. Jacobsen.—p. 376.

Deposition of Pigment in Sparrow's Bill in Response to Direct Applications as Specific and Quantitative Test for Androgen. C. A. Pfeiffer, C. W. Hooker and A. Kirschbaum.—p. 389.

Water Diuresis and Water Intoxication in Relation to Adrenal Cortex. R. Gaunt.—p. 400.

Influence of 11-Dehydro-17-Hydroxycorticosterone (Compound E) on Growth of Malignant Tumor in Mouse. F. R. Heilman and E. C. Kendall.—p. 416.

Florida Medical Association Journal, Jacksonville

31:1-40 (July) 1944

Relationship of Obstructions to Urinary Affections. E. G. Ballenger. —p. 13.
*Rupture of Coronary Artery: Report of Case with Necropsy. M. Dobrin. —p. 15.
Collapse Therapy in Pulmonary Tuberculosis. R. D. Thompson.—p. 16.

Rupture of Coronary Artery.—A man aged 74 was hospitalized with the complaint of tightness in the abdomen and shortness of breath. These symptoms came on gradually and grew worse. Six days previously he had been seized with a pain across the back, which radiated up the neck to both jaws and down both arms, lasting ten minutes; four days before admission he had been kept awake most of the night with similar pains. The pulse could not be felt. The systolic blood pressure appeared to be about 50. Oxygen was administered, and morphine was given twice during the night. The patient continued to have severe dyspnea and died the next morning. At necropsy the pericardial sac contained about 650 cc. of liquid and clotted blood. On the anterior surface of the left ventricle, adjacent to the anterior descending branch of the left coronary artery, there was an irregular tear in the epicardium, with a small blood clot extruding. The coronary artery was sclerotic and calcareous, and there was a rupture of the artery with clotted blood in the opening. Dobrin states that the literature contains reports of only 33 cases of death due to rupture of a coronary artery.

Ohio State Medical Journal, Columbus

40:501-612 (June) 1944

Radiology and Law. S. W. Donaldson.—p. 517.
Incidence of Hypothyroidism. R. M. Watkins.—p. 521.
Dark Adaptation in Skin Conditions. J. D. Walters.—p. 524.
Ruptured Dissecting Aneurysm Associated with Syphilitic Aortitis. J. C. Sherrick.—p. 527.
Recognition of Nonpollen Allergy of Respiratory Tract by General Practitioner. R. S. Rosedale.—p. 529.
Etiology of Regional Enteritis, Role of Inflammatory Bands and Ileocecal Valve Incompetence. J. L. DeCourcy.—p. 533.
*Case of Acute Leukemia Complicating Pregnancy, With Necropsy Findings in Fetus. H. S. Applebaum.—p. 536.
Care of Crippled. E. H. Wilson.—p. 539.

Leukemia Complicating Pregnancy.—Applebaum reports a case in which myeloid leukemia developed during the first half of pregnancy. Three blood transfusions produced prompt but short lived improvement. A month later the woman, aged 29, was hospitalized again and was given x-ray treatments and blood transfusions; in spite of some improvement the course was steadily downhill. Since the patient would take no food, and nausea and vomiting became persistent, dextrose and saline solution together with amino acids were started intravenously; vitamins were given parenterally, all to no avail. A cesarean operation was performed in the hope of saving the child and giving some relief to the patient. The fetus was found dead, and the mother expired several hours later. Microscopic examination of the organs of the fetus revealed no leukemic infiltrations of the lymph nodes or spleen or of any of the 23 sections taken from the various organs. The absence of leukemia from the fetus is another link in the chain of evidence that "a leukemic mother has never given birth to an infant with leukemia." This suggests that leukemia in man is probably not transmitted by the mother to the child.

Pennsylvania Medical Journal, Harrisburg

47:961-1056 (July) 1944

Evaluation of Kenny Method in Treatment of Chronic Infantile Paralysis. B. Chance Jr.—p. 975.
Principles of Preparation for and Management of Elective Surgery in Children. J. A. Cowan Jr.—p. 979.
Continuous, Fractional Spinal Anesthesia in Obstetrics and Gynecology: Report of 308 Cases with Observations at Philadelphia Lying-In Hospital. J. C. Ullery.—p. 982.
Treatment of Impaired Hearing by Radiation of Excessive Lymphoid Tissue in Nasopharynx. H. D. Rentschler and J. W. Settle Jr. —p. 985.
Absence of Pain in Serious Urologic Disease. D. M. Davis.—p. 989.
Effect of Socialized Medicine on Workmen's Compensation and the Doctor in War. F. F. Borzell.—p. 993.

Public Health Reports, Washington, D. C.

59:765-796 (June 16) 1944

Therapeutic Efficacy of Phenyl Arsenoxides in Mouse and Rabbit Trypanosomiasis (Tryp. Equiperdum). H. Eagle, R. B. Hogan, G. O. Doak and H. G. Steinman.—p. 765.

59:797-828 (June 23) 1944

Births, Infant Mortality and Maternal Mortality in United States—1942. J. Yerushalmy.—p. 797.

59:829-856 (June 30) 1944

Sieve Device for Sampling Air Borne Micro-Organisms. H. G. DuBuy and L. R. Crisp.—p. 829.
Production of Vitamin K Deficiency in Rats by Various Sulfonamides. A. Kornberg and W. H. Sebrell.—p. 832.

Radiology, Syracuse, N. Y.

42:531-638 (June) 1944

Cancer of Rectum. N. A. McCormick.—p. 531.
Clinical Features, Diagnosis and Treatment of Carcinoma of Colon and Rectum. D. S. Bellin.—p. 539.
Results of Treatment of 173 Cases of Carcinoma of Rectum. M. Malbin and K. W. Stenstrom.—p. 545.
*Aseptic Necrosis in Adults: Caisson Workers and Others. H. K. Taylor. —p. 550.
Right Aortic Arch, with Report of 8 Cases. D. Eisen.—p. 570.
*Accidental Trauma and Tumor Metastasis. B. J. Toth.—p. 579.
Million Volt Isodose Curves for Angulated Beams. M. C. Reinhard and H. L. Goltz.—p. 591.

Aseptic Necrosis in Caisson Workers and Others.—Taylor observed 54 persons showing aseptic necrosis and bone infarcts. Of the 13 patients who had worked under compressed air for varying periods of time, some were subjected to sudden changes of atmospheric pressure and had experienced symptoms of aeroembolism, decompression illness or bends. Others were not subjected to sudden changes in atmospheric pressure. Of the latter group some had mild or subacute symptoms of decompression illness and others did not. Shaft and joint lesions do not develop immediately after decompression illness. Considerable time must elapse. The shaft lesions are usually asymptomatic and are discovered accidentally. In the joints secondary arthritic changes occur resembling a chronic hypertrophic osteoarthritis. The lesions observed in the 41 patients who had never worked under compressed air and had never been subjected to sudden or violent changes in atmospheric pressure were similar to those in the occupational group. In the caisson worker the etiologic factor is the presence of an inert gas, nitrogen, in bubble formation, either forming an embolus or producing pressure, or both, thus interfering with the circulation to the part. In the noncaisson worker there is no apparent etiologic factor. The bone lesions may be single, though usually they are multiple and often bilateral. Caisson workers presented extensive and multiple lesions more often than others. In the noncaisson worker, in whom the lesion is single and not extensive, the reparative changes are usually greater. Deep sea divers and aviators may develop aeroembolism. There are, however, no recorded evidences of bone changes in either naval or air personnel who have had attacks of aeroembolism.

Accidental Trauma and Tumor Metastasis.—Toth presents 2 cases of generalized carcinomatosis which were studied with a view of determining the influence of mechanical injuries on the formation of metastases. He lists the requirements that, according to Segond, Thiem, Lubarsch and Ewing, should be fulfilled to establish a relationship between injury and tumor. He evaluates his 2 cases with these requirements in mind. Lacerations of the skin, repeated subcutaneous and intravenous injections, surgical amputation of the forearm, and linear as well as compression fractures failed to result in the localization of secondary tumors. One post-traumatic and several supposedly post-traumatic metastases seemingly fulfilled all the requirements of Segond for the establishment of a definite relationship between accidental injury and metastatic cancer. On further observation, however, it became evident that this patient had an unusual type of metastatic spread from a primary lung carcinoma with preferential involvement of the subcutaneous tissues and muscles. The practically identical appearance of several intramuscular and subcutaneous metastases was evidence against a traumatic influence. A subsequent experimental blunt traumatization affecting mainly the subcutaneous structures in an apparently favorable location failed to result in the formation of a metas-

tasis. It thus appears that the unknown laws of metastasis have had an overwhelming—probably an exclusive—influence in the localization of the secondary deposits, possibly being entirely indifferent to the incidental presence of multiple traumas. The author suggests that in cases which are doubtful from the medicolegal point of view a further requirement should be added to the usual postulates of Segond and others.

Southern Medical Journal, Birmingham, Ala.

37:365-414 (July) 1944

*Deaths from Sulfonamides: Clinical and Pathological Study, with Report of 3 Cases. C. N. Gessler.—p. 365.
*Clinical Analysis of 1,000 Consecutive Cases of Low Back Pain, with Particular Reference to Sciatic Pain Caused by Extrusion of Intervertebral Disk. F. Jelsma.—p. 372.
Practical Application of Physical Therapy in Medicine. W. J. Zeiter.—p. 378.
Problem of Benign Prostate. E. O. Swartz.—p. 382.
Menstrual Irregularity. W. Bickers.—p. 391.
Radium Treatment of Nasopharyngeal Lymphoid Hypertrophy. R. E. Fricke and H. A. Brown.—p. 399.
Some of Detoxifying Properties of Heparin. D. I. Macht.—p. 402.
Study of Incidence and Treatment of Intestinal Parasites in Southeastern Kentucky. W. C. Bailey.—p. 407.

Deaths from Sulfonamides.—Gessler studied tissues from 3 patients in whom death is believed to have been caused by sulfonamide administration. The major cause of death in all 3 cases was uremia, but in 1 case a previously undescribed type of pulmonary pathology was believed to be an important factor. In 2 cases sulfathiazole was the drug used; in the third case sulfadiazine was used. The author presents clinical histories, postmortem observations and the results of microscopic studies. In 1 case, in addition to tubular nephritis, myocarditis and visceral focal necrosis, a previously undescribed interstitial pneumonitis with hyaline membrane formation was found. The author reviews 30 cases from the literature. In these sulfathiazole was the incriminated medication 16 times, sulfadiazine 5 times, sulfapyridine 6 times and sulfanilamide 3 times. Anuria was the complicating factor in 18 cases, the majority of which were treated with sulfathiazole. Agranulocytosis was the complicating factor 5 times; agranulocytosis was not found in sulfadiazine treated cases. Hemolytic anemia was the complicating factor once; sulfanilamide was used then. In the other 6 cases death was not due to drug intoxication, but signs of drug intoxication were incidental findings of the necropsy. The urinary tract was blocked by concretions of the drug in 3 cases; a different drug was used in each of these cases. In 11 cases there were evidences which suggested that there might be a blocked urinary tract; most of these were in sulfathiazole treated cases. Uremia and agranulocytosis are the most frequent lethal complications. The mechanism by which the sulfonamides cause toxic symptoms has not been completely explained. There are many uncorrelated facts which require further study. It seems likely that many of the minor reactions —nausea, dizziness, disorientation, headaches—may be due to the allergic or pharmacologic reactions; kidney damage and hematuria are apparently due more often to mechanical factors. Focal necrosis, agranulocytosis and periarteritis nodosa may be due to a combination of these factors. Although most physicians view with alarm the appearance of one or more of the minor reactions while patients are receiving sulfonamides, there is little evidence to suggest that the minor reactions are precursors of the more serious reactions.

Clinical Analysis of 1,000 Cases of Low Back Pain.—The scope of this paper by Jelsma is limited to the consideration of those cases in which pain is complained of in the lower lumbar region especially with distribution of pain along the sciatic nerve. A total of 531 of the patients had sufficient clinical signs and symptoms to warrant the assumption that a focal neurologic lesion was present. It was found that 484 of these 531 patients had clinical signs to warrant the diagnosis of probable herniated disk. Of the remaining 47 patients with symptoms of neurologic focal lesions 10 had crushing of one or more of the lumbar vertebrae, 10 had a metastasis to the lumbar spine, 9 had primary intradural tumors, 9 had spina bifida occulta, 4 had spondylolisthesis, 4 had sacralization of the fifth lumbar vertebra, and in 1 patient the symptoms were due to an arachnoid cyst. In many of the 469 cases in which focal neurologic signs could not be found the pain was apparently due to hypertrophic arthritic changes. In view of the abundance of nerve endings found in the posterior longitudinal ligaments, it has been suggested that the cause for many low back pains, without other evident causes, is due to involvement of the disks without protrusion and without compression of the spinal nerves. McKenzie feels that destructive processes of the disks (traumatic or otherwise) can produce such pains. This group of patients was treated with palliative measures. Palliative measures were used for all patients with herniated disk as long as it gave improvement. The surgical mortality rate was zero.

Surgery, St. Louis

15:869-1036 (June) 1944

Observations on Battle Fractures of Extremities. O. P. Hampton Jr. and J. M. Parker.—p. 869.
Fractures of Femur: Results of Treatment Over Period of Six Years at Mayo Clinic. R. K. Ghormley, G. S. Phalen, R. E. VanDemark and C. A. Luckey.—p. 887.
Traumatic Synostosis of Distal Third of Radius and Ulna. F. Hurt and S. C. Flo.—p. 894.
*Studies on Burns: I. Effect of Plaster Confinement Applied at Varying Intervals After Burning. E. M. Alrich and E. P. Lehman.—p. 899.
*Id.: II. Observations on Vasoconstrictor Substance in Lymph from Burned Area. E. M. Alrich.—p. 908.
Cotton as Suture Material. E. O. Latimer.—p. 913.
Surgical Treatment of Carcinoma of Common Bile Duct. K. L. Pickrell and A. Blalock.—p. 923.
*Gynecomastia, with Report of 7 Cases. E. F. Gooel.—p. 938.
Carcinoma of Breast: Comparative Clinical and Pathologic Study of Tumors Metastasizing to Bone and to Viscera. F. X. Paletta and E. P. Lehman.—p. 944.
Experimental Esophagectomy. O. Swenson and T. V. Magruder Jr.—p. 954.
Congenital Macrogingivae (Fibromatosis Gingivae) and Hypertrichosis. L. T. Byars and B. G. Sarnat.—p. 964.
Urinary Infection After Colostomy. H. Milwidsky and F. Mandl.—p. 971.
Rectal and Colonic Complications of Pelvic Irradiation. H. I. Kallet and M. J. Thorstad.—p. 980.
Report of Case of Retroperitoneal Hemangioendothelioma. T. J. Snodgrass.—p. 988.
Foreign Body in Thyroid Gland: Case Report. H. T. Wikle and T. Spellman.—p. 994.

Effect of Plaster Confinement Applied at Varying Intervals After Burning.—Alrich and Lehman made studies on dogs to determine the effects of plaster confinement applied at varying intervals following a standard burn on the composition of the circulating blood and lymph from the burned area. Data were also obtained on the local effects of this form of treatment. It is important to distinguish between plaster confinement of a burn and pressure dressing. It is conceivable that pressure dressings applied late might be effective in returning some of the extravasated plasma to the blood stream, a result not to be anticipated with simple confining dressings. The experiments tend to substantiate the hypothesis that confinement of a burn in a cast protects the circulating blood volume. They also suggest that the time of application of the confining dressing is of major importance. From the point of view of preventing plasma loss this type of dressing, therefore, is not perfectly adapted to the care of clinical burns that are treated more than an hour or so after injury. Since, however, there is evidence that local tissue loss is decreased, the use of this treatment is not contraindicated. Whether or not pressure dressings, in contradistinction to simple confining dressings, are effective in returning already extravasated plasma to the circulation is not shown by this study.

Vasoconstrictor Substance in Lymph from a Burned Area.—This study by Alrich offers evidence of the existence of a vasoconstrictor substance in the lymph from a burned area. Dogs under usual laboratory conditions were employed, divided into control and experimental animals. The latter were subjected under pentothal sodium anesthesia to a standard hot water burn of a paw according to the method of Glenn, Peterson and Drinker. In both groups a lymph vessel leading from the paw was cannulated and samples of lymph, heparinized as the fluid entered the cannula, were collected. In the burned animals the lymph flow was spontaneous; in the control animals mechanically effected passive motion of the paw was necessary to obtain adequate samples. Hourly samples of lymph were obtained for study and were passed through the perfused rabbit's ear in varying amounts. The presence of a vasoconstricting substance was indicated by a decrease in the electrically recorded drop

rate from the ear vein. Since vasoconstrictor substances are developed in the process of coagulation, both the control and the experimental observations were carried out on previously heparinized as well as on normal dogs. The reported experiments give evidence of a vasoconstricting substance in the lymph from an experimentally burned area. It is not due to the process of coagulation, since it is present when previously heparinized animals are employed. It is possible that this is the constrictor substance observed in the circulating blood by Page. The substance has not been identified nor its relation to a supposed "burn toxemia" established.

Gynecomastia.—Seven cases of gynecomastia, are reviewed by Gooel. Endocrine influences and trauma are probable etiologic factors. Only 1 patient presented any semblance of endocrine dyscrasia. Three patients in this series mentioned the possibility of trauma when questioned closely, but only 1 was definite. Gynecomastia may be confused clinically with chronic mastitis. It is difficult to predict preoperatively exactly what pathologic change has occurred. Gynecomastia may be underlying, but mastitis or neoplasm may be contributory. Metaplasia in an intraductal papilloma was found in 1 case in this series. All patients in this series were treated by mastectomy. All were healed and ready for full duty in from ten days to three weeks. The surgical approach was through a slightly curved, transverse incision made just inferior to the areola. This permitted easy dissection of the areola and nipple from the breast without injury, offered approach to all portions of the breast including the axillary prolongation and permitted a cosmetically desirable closure without distortion of the areola. The entire breast was excised. This apparently is important, since only a portion of the left breast in 1 case had been removed at the first operation, following which symptoms continued.

United States Naval Med. Bulletin, Washington, D. C.

43:1-208 (July) 1944. **Partial Index**

Rheumatic Fever and Acute Arthritis as Causes for Evacuation from South Pacific Area. H. B. Sprague and S. McGinn.—p. 1.
Infectious Polyneuritis: Report of 4 Cases. A. W. Stearns and H. I. Harris.—p. 13.
Dermatologic Practice in the South Pacific: Review of 1,500 Cases. C. T. Bingham and R. L. Macke.—p. 17.
Factors in Efficient Mass Blood Procurement. K. P. A. Taylor.—p. 25.
Airsickness. R. G. Witwer.—p. 34.
Ultraviolet Irradiation Relative to Anoxia and Bend Susceptibility: Preliminary Investigation. W. M. Davidson.—p. 37.
Experiment in Psychotherapy During Selection Examining. J. H. Closson and H. M. Hildreth.—p. 39.
Changing Picture of Postpneumonic Empyema Thoracis Complicating Sulfonamide Treated Pneumonia. C. D. Benson and C. W. McLaughlin Jr.—p. 46.
Knee Injuries in Service Personnel. J. H. Allan and J. T. Nicholson. —p. 63.
Surgical Casualties of Amphibious Warfare. L. K. Ferguson.—p. 73.
Renoureteral Colic in South Pacific Area. M. Glazier and C. Olson. —p. 80.
*Autoplastic Sutures in Repair of Inguinal Hernia. G. G. Chiles and H. F. Lenhardt.—p. 83.
*Temporary Stimulation of Emmetropic Visual Acuity. J. E. Lebensohn and R. R. Sullivan.—p. 90.
Cosmetic Ocular Rehabilitation. M. J. Blaess.—p. 96.
Application of Caudal Anesthesia to General Surgery. W. M. Russell and J. E. Conley.—p. 100.
Anesthesia in Military Medicine: Administration by Unskilled. M. B. Genauer.—p. 105.
Procaine Hydrochloride 4 per cent: Indications for Use. J. C. Farquhar. —p. 111.
Analysis of Low Incidence of Infectious Diseases at Secondary Training Center. W. V. Lulow and H. B. Benjamin.—p. 114.

Autoplastic Sutures in Inguinal Hernia.—Chiles and Lenhardt point out that the use of fascial strips for the repair of inguinal hernia was advocated more than four decades ago by McArthur. The type of hernia repair advocated in this paper is based on the technic of Robins, who in 1938 reported his results with the use of autoplastic sutures in hernia repair. The authors describe the operative technic and stress the following points: 1. The careful separation and identification of the various abdominal layers will not only facilitate the operation but also alfow the structures to fall into their new relationship after suturing. 2. Fascial sutures are resistant to infection; they do not tear and are not absorbed. 3. The stress or strain is not all on the terminal end of the suture, but it is applied after the principle of a windlass, being equally distributed throughout the course of the suture. 4. The existing pathologic condition should be the guide as to the type of repair to be used. 5. When for any reason the external oblique muscle is inadequate, the fascia can be secured from the fascia lata of the leg by the use of a Masson stripper.

Temporary Stimulation of Emmetropic Visual Acuity.—Lebensohn and Sullivan say that visuopsychic excitation seems to be the only factor common to the procedures recommended for improving natural vision. An increase of interest, attention and alertness effects keener interpretation of visuosensory stimuli. Drugs that accelerate cortical or sympathetic activity should be effective. This view is supported by recent experiments on one of the fundamental measurements of visual function, the fusion frequency of flicker, which is indicative of the excitability of the visual system. An increase of acuity above that attainable by a careful refraction would emphasize how much the psychic cortex participates in visual acuity measurements. Fifty men were selected for study whose visual acuity in each eye was 20/20 or better, naturally or with glasses. Acuity was tested on the double broken circles of the Ferree-Rand chart. From a stop watch record of the ten letter reading, the speed per letter in tenths of a second was noted and the average of three trials recorded. In every subject the eyes were examined separately and binocularly, so that each examination involved three tests for speed and acuity respectively. Each man was tested at 8 a. m. and was then given a placebo as a control or 10 mg. of amphetamine or 3 cc. of nikethamide, and the tests were repeated at 10 a. m. and 2 p. m. A consistent improvement in acuity and reading speed was induced by nikethamide and amphetamine in both slow and fast readers. Nikethamide or amphetamine improves reading speed more than visual acuity, but the effect of amphetamine on both visual functions is more pronounced than the effect of nikethamide. Analysis of 150 tests shows that in 44 cases amphetamine was relatively superior to nikethamide in stimulating visual acuity and in 126 cases in increasing reading speed. Amphetamine apparently exerts a more beneficial influence on normal than on ametropic vision. This was proved by comparative tests on 16 persons with ametropia. The authors conclude that the psychogenic origin of many visual complaints is probably insufficiently appreciated. The visuopsychic cortex can be stimulated by various measures, but amphetamine in small doses (from 5 to 10 mg.) is a simple, safe and efficient agent for this purpose.

Virginia Medical Monthly, Richmond

71:339-394 (July) 1944

Plastic Surgery of Severe Burns. E. I. Evans and T. J. Alm.—p. 342.
Demerol—Substitute for Morphine in Surgical Practice. C. S. White. —p. 351.
Recent Progress in Physical Medicine. R. Kovacs.—p. 354.
Case of Syphilitic Paralysis Cured by Fever. J. O. Fitzgerald Jr. —p. 356.
Treatment of Certain Mental Disorders by Psychosurgery. R. F. Gayle Jr. and C. L. Neale.—p. 361.
Maternal Mortality Situation. C. J. Andrews.—p. 366.
Nutritional Activities of Virginia State Department of Health. H. H. Henderson, A. L. Carson Jr. and J. B. Porterfield.—p. 371.
Nutrition from Doctor's Point of View. W. Wilkins.—p. 374.
Sun and Heat Disease. G. T. Grinnan.—p. 380.

War Medicine, Chicago

5:349-432 (June) 1944

Nutritional Disorders in Japanese Internment Camps. W. H. Adolph, A. V. Greaves, Josephine C. Lawney and H. L. Robinson.—p. 349.
Infectious Mononucleosis in Army. R. H. Mitchell and L. Zetzel. —p. 356.
Constitutional Pathologic State and Military Fitness. J. C. Rheingold. —p. 361.
Herniation of Muscles of Legs. H. C. Goldberg and G. W. Comstock. —p. 365.
Sodium Amytal Narcosis in Treatment of Operational Fatigue in Combat Aircrews. D. W. Hastings, B. C. Glueck and D. G. Wright.—p. 368.
Special Aspects of Procedures and Organization for Induction and Discharge in Canadian Army. L. S. Kubie.—p. 373.
Clinical Features and Diagnosis of Malingering in Military Personnel: Use of Barbiturate Narcosis as Aid in Detection. A. O. Ludwig. —p. 378.
Massive Craniocerebral Trauma from Airplane Propeller: Report of Case with Recovery. J. D. O'Connor.—p. 383.
Ancylostomiasis Associated with Hematuria. H. Davis.—p. 385.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Journal of Mental Science, London

90:511-680 (April) 1944

Psychogenic Amnesia: Refusal to Remember. D. N. Parfitt and C. M. C. Gall.—p. 511.
*Psychosurgery: Evaluation of 200 Cases Over Seven Years. W. Freeman and J. W. Watts.—p. 532.
Case of Narcolepsy with Oneiric Manifestations. D. Furtado and F. E. P. Valente.—p. 538.
Shock Therapy in Psychoses: Possible Rational Basis and Its Clinical Applications, Based on Three Years' Experience of Its Use in Military Psychiatry. G. T. Stockings.—p. 550.
Some Problems Arising From Study of Mental Patients Over Age of Sixty Years. F. Post.—p. 554.
Psychoneuroses in R. A. F. Ground Personnel. D. N. Parfitt.—p. 566.
Paranoid Reaction Associated with Oculogyric Crises and Parkinsonism. W. H. Gillespie.—p. 582.
Unusual Brain Injury, with Note on Lesions of Superior Cerebellar Peduncle. J. C. S. Thomas.—p. 588.
Eye Movements in Electrical Shock Procedure. F. F. Kino.—p. 592.
Parotid Gland Secretion in Affective Mental Disorders. H. J. Eysenck and P. M. Yap.—p. 595.
Vitamins B1 and C in Effort Syndrome. Phyllis G. Croft, M. S. Jones and D. Richter.—p. 603.

Evaluation of Psychosurgery.—Freeman and Watts state that different patients require the severing of different amounts of frontal lobe fibers. Those showing more or less pure affective reactions respond to minimal interruptions, whereas persons with long standing obsessive neuroses or schizophrenia require maximal operations. Reoperations have been necessary in some 20 per cent of their 204 cases, recovery from distress being achieved only after a third operative procedure. Once the emotional nucleus of the psychosis has been successfully abolished, the reconstruction of the personality can be attempted. Sometimes this is simple and rapid; at other times so much of the frontal lobe has had to be sacrificed by operation that return to independent existence is difficult, prolonged and incomplete. A table gives the present status of 154 living patients after an interval of six months to seven years following prefrontal lobotomy; 34 patients have been operated on too recently for proper evaluation, while 16 have died: 4 from operation, 2 from suicide and the other 10 from natural causes. Sixty-one per cent of the patients are usefully occupied, whereas only 12 per cent are confined in institutions. Study of eight brains has shown that the cortical incisions are small and destroy few cells. The most striking alteration is the severe degeneration of the nucleus medialis dorsalis of the thalamus. The thalamofrontal radiation has been fairly completely severed. The severing of the thalamofrontal pathway prevents the patient from maintaining his obsessive preoccupation with his self-directed ideas. There is no falling off in the mental acuity after operation. Some reduction in speed is observed after operation, but accuracy is generally greater. Above all, it is in social situations that these patients manifest a change from their previous condition. They laugh easily and flare up in anger, but there is none of the brooding intensity that characterized the psychosis preoperatively. Visceral complaints are forgotten. One of the commonest sequelae of prefrontal lobotomy is pronounced gain in weight resulting from a healthy appetite and a sound digestion. Naturally industrious persons are oblivious to fatigue, and preoccupation with somatic sensations is lost. Interests are directed outward.

Lancet, London

1:713-744 (June 3) 1944

Education for Health. J. A. Ryle.—p. 713.
Retrobulbar Optic Neuritis: Pathognomonic Sign. R. A. Greeves.—p. 715.
Wounds of Bladder. J. G. Sandrey and R. A. Mogg.—p. 716.
*Stomatitis Due to Riboflavin Deficiency. H. E. Jones, T. G. Armstrong, H. F. Green and V. Chadwick.—p. 720.
Early Movement in Treatment of Closed Fractures. B. H. Burns and R. H. Young.—p. 723.

Stomatitis Due to Riboflavin Deficiency.—Jones and his associates observed stomatitis in 1,746 of 10,313 men in a camp in North Africa. The symptoms comprised sore tongue, sore lips, some degree of trismus from the cheilosis, and excessive salivation. An early sign was the avoidance of pepper, of which these men ordinarily eat a considerable quantity. Salivation was often troublesome. In the mildest cases, soreness at the tip and/or edges of the tongue was complained of. These areas were seen to be reddened and the papillae less conspicuous than usual. As atrophy advanced, the redness usually diminished. During this intermediate stage it was not uncommon to see some of the papillae become enlarged and flat topped—a process best described as "mushrooming." In more advanced cases the tongue became increasingly smooth and shiny, and fissures developed. In the final stage the anterior part of the tongue was completely smooth and atrophic. Further examinations of the tongues were carried out by means of the slit lamp, which gives a clear picture at a large magnification. An angular stomatitis was an important change. A less common finding on the mucosa of the lower lip was a group of small papular swellings, each about the size of a pinhead and usually slightly paler than the surrounding reddened mucosa. One striking observation was the sparing of the upper lip. In only 20 of the 1,746 cases affected were lesions seen on the mucous membrane of the upper lip. The incidence of changes on the palate was about 5 per cent. They took the form of raw, red areas. The authors analyze the diets given to these men. On a diet containing an average of 1.61 mg. of riboflavin per day the camp population had been free from stomatitis. It developed about two months after the daily riboflavin intake was reduced to about 1 mg. per head, and it was not abolished by an intake of 1.28 mg. in the following month. It was noted that none of the 36 men employed in the bakery developed stomatitis. They were accustomed to test the saltiness of the dough by tasting it, and by this means they may have obtained enough yeast to keep them healthy. The stomatitis cleared rapidly on addition of milk, meat or eggs to the diet. Other remedies tried were calcium lactate, red palm oil, which contained large amounts of vitamin A, and vitamin oil containing vitamins A and D. None of these remedies effected improvement; however, fresh or dried yeast in ½ ounce doses effected rapid cure. Thus the cause of the stomatitis was evidently deficiency of a factor present in milk, meat, eggs and yeast, and further attention was directed to two vitamins present in yeast—nicotinic acid and riboflavin. The stomatitis yielded rapidly to treatment with riboflavin.

Schweizerische medizinische Wochenschrift, Basel

73:1013-1036 (Aug. 21) 1943

*Role of Monaldi's Suction Drainage in Collapse Therapy of Pulmonary Tuberculosis. A. Brunner.—p. 1013.
*Question of Pathogenicity of Trichomonas. O. Käser.—p. 1021.
Functional Recuperation with Aid of Autoplastic Bone Grafts and of Skin Flaps with Tubulated Pedicle. A. Jentzer.—p. 1023.
Observations on Metabolism of Iron and Vitamins in Course of Physical Effort and Training. A. Delachaux and W. Ott.—p. 1026.
Diagnosis and Therapy of Conditions Caused by B Hypovitaminosis. C. Braendli-Wyss.—p. 1028.
Contact Lenses. J. Strebel.—p. 1029.
"Necrospermia" Due to Condom. W. Lutz.—p. 1031.

Suction Drainage in Pulmonary Tuberculosis.—Brunner concludes that suction drainage produces permanent results in patients with isolated new cavities surrounded by healthy tissue. Monaldi's method is also a valuable aid in the presence of residual cavities after collapse therapy. A combination of preliminary suction drainage with subsequent thoracoplasty holds promise of closure even in old and partly rigid tertiary cavities, and this procedure makes only comparatively moderate demands on the patient.

Pathogenicity of Trichomonas.—Käser believes that Trichomonas vaginalis is not pathogenic. It frequently occurs in the presence of completely normal vaginal conditions. Signs of inflammation or of leukorrhea were present only when Trichomonas vaginalis concurred with an unfavorable vaginal flora, never with a pure Döderlein flora. Patients whose vaginal secretion contained Trichomonas vaginalis had neither a higher rate of postoperative complications nor a greater puerperal morbidity. The percentage of inflammatory genital disorders was no greater in women with Trichomonas vaginalis than in those without Trichomonas vaginalis.

Book Notices

Intravenous Anesthesia. By R. Charles Adams, M.D., C.M., M.S., Associate in Section on Anesthesiology, Mayo Clinic, Rochester, Minnesota. Cloth. Price, $12. Pp. 663, with 75 illustrations. New York & London: Paul B. Hoeber, Inc., 1944.

This monograph covers the development of intravenous anesthesia from 1872 until the present time. It includes chapters on chloral hydrate, hedonal, ether, isopral, paraldehyde, magnesium sulfate, morphine, alcohol, tribromoethanol, somnifene, local anethesics, allylisopropyl barbituric acid (alurate), phenobarbital sodium, dial, pernoston, sodium amytal, pentobarbital sodium, evipal soluble, pentothal sodium, miscellaneous derivatives of barbituric acid and analeptics. Each of these subjects is introduced by a concise consideration of the historical data. This is followed by a consideration of the chemistry, pharmacologic action and clinical use. So completely is each subject treated that the book will be very useful for clinicians and teachers. A practically complete bibliography of references (3,489) makes this book valuable for research workers.

Much effort was expended by the author and those who assisted him in clarifying the confusion which has existed regarding the names of the many derivatives of barbituric acid. To the anesthetist the value of this book is apparent. General practitioners, who use intravenous anesthesia only occasionally, can quickly obtain information about the action, the dangers, the dose and the method of administration of the drugs that are used for this purpose. An exhaustive consideration of pentothal sodium, which is at the present time the most useful and available of the derivatives of barbituric acid for intravenous use, is presented. The concluding chapter, on "Use of Intravenous Anesthesia and the Barbiturates in Military Surgery," indicates the timeliness of the book.

Commendation of the author for the great effort which obviously was made in compiling this book, as well as its recommendation to all persons who have occasion to use or to study the drugs which are used intravenously is made after reading this valuable work, which is very well done.

Fractures and Joint Injuries. By R. Watson-Jones, B.Sc., M.Ch.Orth., F.R.C.S., Consultant in Orthopædic Surgery to the Royal Air Force. Volumes I and II. Third edition. Cloth. Price, $18 per set. Pp. 407; 409-960, with 1,353 illustrations. Baltimore: William Wood & Company, 1943.

Mr. Jones is civilian consultant to the Royal Air Force on fractures and dislocations. He travels from one end of the British Isles to the other by air, by train, by bus, setting up fracture hospitals for R. A. F. fliers. He not only sets up the hospital but consults with the local hospital surgeons regarding treatment. He personally supervises and operates in some of the difficult cases. Mr. Jones is well known in the United States and Canada. He is especially well known to orthopedic surgeons and to traumatic surgeons, especially those who deal with fractures and dislocations. Because of the large number of additions, this edition has been published in two volumes. More books like this are needed; that is, books that are based on (1) large experience, (2) careful study of the subject and (3) good judgment not only in diagnosis but in treatment.

The material is well selected, the composition is excellent and the sequence is proper. The illustrations consist of line drawings, photographs, x-ray reproductions, diagrams, color figures and "peep" illustrations. "Peep" illustrations are those which permit the reader to make a diagnosis from the illustration and then flip a flap covering another nearby illustration, thereby uncovering the correct diagnosis. Many of the diagrams, such as those illustrating blood supply to various sections of bones, such as the ankle bones and the leg bones, are in color.

There are many excellent features in the book, from the standpoint both of basic principles of diagnosis and treatment and from that of specific diagnosis and treatment. (Some will consider Jones radical in several instances.)

The author states that the first edition of his book on fractures and joint injuries was written under the threat of war, the second with the realization of war and the third after the experience of war. The writing of many pages has been disturbed by the fall of bombs and the crash of timber. Manuscript has been destroyed by the effect of fire and explosion. His proofs have been delayed by the emergency of casualty surgery.

The author has had a tremendous experience. In former editions he stated that he had experience with nearly 50,000 civilian casualties, for example in the first two years of the war 75 cases of dislocation of the astragalus have occurred in the Royal Air Force Medical Service.

Every chapter has been revised, new sections have been added on open and infected fractures, war wounds, sequestrectomy, vascular injuries, immersion foot and shelter foot, traumatic edema and the crush syndrome, gangrene due to tourniquets, Volkmann's ischemic contracture, traumatic asphyxia and chest injuries, avascular necrosis of the hip joint, distraction of fractures, radiographic diagnosis of union, internal fixation of fractures, no-touch technic, treatment by lay-on grafting, burns and contractures of the hand. New recommendations have been made in the treatment of supraspinatus tendon injury, and various fractures and dislocations of the upper extremities. He describes methods of treatment for acromioclavicular dislocation and supracondylar fracture of the femur. The author is very strong for rehabilitation centers. It is evident that rehabilitation is the watchword of the hour. Treatment is concentrated not only on the union of fractures but on the function of limbs, not only on surgery and manipulation but on gymnastics and recreation, not only on the relief of disability but on the cure of psychologic disorders. This is the most striking development of fracture treatment in recent years, and a special chapter is devoted to its consideration. The new addition has over 200 more pages than the early editions and therefore was published in two volumes. The expansion is due largely to added roentgenograms, diagrams and photographs. There is one interesting quotation which reads "My story is not long but it took me a long time to make it short," credited to Thoreau. Jones emphasizes the fact that a fracture is not to be labeled ununited simply because union is incomplete in a specific number of weeks or months. He emphasizes the prevention of edema of the leg.

One of the striking features of the book is the chapter on vascular injuries complicating wounds and fractures. Another section of importance is on the danger of x-rays to surgeons. He recommends the use of Unna's paste dressing to prevent edema after the removal of a plaster of paris cast of the leg. There is a good section on the complications of plaster immobilization. There is another on the indications for operative reduction. The second on scrupulous aseptic technic is well worth reading. There is an excellent section on open and infected fractures in war wounds. Over 40,000 amputations were performed in England during the last war and during the few years immediately following. Since then tremendous strides have been made in the surgery of wounds in compound fractures, and amputations are becoming increasingly rare. For example, in one large series of casualties treated in R. A. F. base hospitals, the incidence of secondary amputation or spreading infection, gas gangrene, secondary hemorrhage and other complications was as low as 0.1 per cent despite a high proportion of severely infected and grossly contaminated wounds and compound fractures.

There is a large number of references, and it is remarkable how many of Mr. Jones's own contributions have been made to the subject at hand.

Cancer: A Manual for Physicians. Published Jointly by Michigan State Medical Society and Michigan Department of Health. Cloth. Pp. 225. Lansing, 1944.

This book is written by members of the Michigan State Medical Society under the editorship of its cancer committee. The Michigan Department of Health contributed toward the expenses of publication. Like that of similar books in other states, its purpose is to "assist the physician in making his diagnosis of early cancer and in reaching his decision as to the type of therapy to be employed, without subjecting the patient to the dangerous delay that sometimes occurs." There are forty-four unsigned articles by thirty-eight authors. These articles deal with the general and special aspects of cancer, including tumors of the brain and of bones. The articles are

of course short but as a rule cover their topics well. The articles on biopsy in tumor diagnosis and on radiotherapy of cancer are especially praiseworthy. The statement about grading of cancer in the first of these articles merits quotation: "Many physicians attach far too much importance to the numerical grade of neoplasms. It must be kept in mind that the grade is assigned by the pathologist only in accordance with his impression of the level of differentiation. By itself, the grade tells nothing about the clinical state of the patient, nor does it indicate the prognosis. A grade 1 carcinoma may have been present for many years and may have spread widely by both infiltration and metastasis. It may still be grade 1 when the patient is about to die from its effects. Conversely, a grade 4 carcinoma may be so early and so small that the patient can be cured by a single sweep of a curet. Type of neoplasm, location, extent, duration and metastasis, as well as grade, determine the prognosis." It may be mentioned also that the fundamental principles of treatment remain the same whatever the grade. The article on carcinoma of the larynx is utterly inadequate, because it does not even mention its treatment with external radiation, which is now the treatment of choice of certain forms of laryngeal cancer. There are instructive articles on occupational cancer, on tumors of the endocrine glands, on the care of the patient with advanced cancer, on the Michigan program, on lay education and on cancer from the general practitioner's point of view. "The most worthwhile service the general practitioner can render his patients who may have cancer is in prompt initiation of the processes through which they will obtain the best diagnostic and therapeutic services possible."

The Compleat Pediatrician: Practical, Diagnostic, Therapeutic and Preventive Pediatrics for the Use of Medical Students, Internes, General Practitioners, and Pediatricians. By Wilburt C. Davison, M.A., D.Sc., M.D., Professor of Pediatrics, Duke University School of Medicine, Durham, North Carolina. (Adaptation of the Title Page of the Compleat Angler by Izaak Walton, 1653.) Fourth edition. Cloth. Price, $3.75. Pp. 256. Durham: Duke University Press, 1943.

Few books on pediatrics have had the widespread acceptance as The Compleat Pediatrician. The fourth edition of this excellent guide and compilation of pediatric facts is current and well edited. Practically all important contributions to the field of pediatrics since the text was last revised three years ago are included in the present edition. Sections on chemotherapy, tropical diseases and infectious diseases have received particular attention, but almost every part of the book has been brought into line with recent work. The book has always enjoyed a merited reputation for its vast amount of practical pediatric facts in the most concise and readable form. Few books dealing with pediatrics are as current and as well edited. Practitioners have always shown a preference for the previous editions, and it has served them well in their practical work. The last few editions have found an increasing acceptance among medical students, who have found it invaluable on their pediatric clerkships. The author's extensive experience as scientist, clinician and educator is reflected in its pages, and few books on pediatrics are as authoritatively edited and as convincingly presented.

Polish School of Medicine at the University of Edinburgh. Editor: Józef Brodzki. Cloth. Pp. 62, with 24 illustrations. London & Edinburgh: Oliver and Boyd, Ltd., 1942.

This little volume tells the exciting story of a unique event in scientific history. Never before has any state set up its own medical school with its own professors teaching its own students in their native tongue on foreign soil and as a part of a foreign university. A considerable part of the Polish army was evacuated to Great Britain on the fall of France in June 1940. Included were several hundred medical officers, among whom were teachers, physicians and scientists of high professional standing. There were also numbers of recent medical graduates and men who had completed part of their medical training in Poland. The University of Edinburgh magnanimously offered its facilities, the Polish government in exile provided financial support and the Polish School of Medicine at the University of Edinburgh was organized. It opened its doors to Polish men and women, officers and civilians, March 22, 1941. Facilities provided by the University of Edinburgh include the use of lecture theaters, tutorial rooms, hospital wards, laboratories, instruments and reagents, microscopes, specimens, slides and films. The faculty includes fourteen former professors in Polish medical schools in addition to ten physicians without former academic connections. During the first year of operation there were seventy-nine students at various academic levels. Medical degrees were conferred on nineteen students during the second academic session. The faculty has contributed to scientific meetings and has published significant scientific articles on the basis of investigations conducted at the new school. This school represents not only the true international spirit of medicine but also the courage and persistence of Polish medicine and education and will provide an important beginning for the rebirth of medicine in Poland, which has now been reduced by the Germans to an "intellectual desert."

Human Constitution in Clinical Medicine. By George Draper, M.D., Associate Professor of Clinical Medicine, College of Physicians and Surgeons, Columbia University, New York, C. W. Dupertuis, Ph.D., Physical Anthropologist, Constitution Clinic, Presbyterian Hospital, New York, and J. L. Caughey Jr., M.D., Med.Sci.D., Associate in Medicine, College of Physicians and Surgeons, Columbia University. Cloth. Price, $4. Pp. 273, with 29 illustrations. New York & London: Paul B. Hoeber, Inc., 1944.

This book is designed primarily for students, to give them an insight into the human constitution as it plays a role in clinical medicine. However, the practitioner will find it exceedingly interesting even though he will have to review some of his basic sciences to understand much of the discussion. From the cultural point of view it is a healthy addition to medical literature, but from a practical standpoint one seriously questions the need for such exact measurements of a group of patients with pernicious anemia, duodenal ulcer, acute rheumatic fever, migraine, toxemia of pregnancy, gallbladder disease, carcinoma of the breast and carcinoma of the uterus. It is hoped that the authors in teaching this material to their students do not hold them too strictly accountable for the details of the textbook but teach the course with the distinct impression that it is something they have been vitally interested in, and they are now happy to give to their students and the medical profession a field in which they have had an interest.

Secretory Mechanism of the Digestive Glands. By B. P. Babkin, M.D., D.Sc., LL.D., Research Professor of Physiology, McGill University, Montreal, Canada. Cloth. Price, $12.75. Pp. 900, with 226 illustrations. New York & London: Paul B. Hoeber, Inc., 1944.

All students of gastroenterology are familiar with "The External Secretions of the Digestive Glands," written in lucid German and extraordinarily well documented by Dr. Babkin. The present volume constitutes another important contribution to gastroenterology. The subject matter deals principally with the mechanisms which are concerned in the regulation of the secretory activity of the digestive glands. It does not cover the older literature, which was adequately covered in the preceding book. It presents a critical review and summary of the work done since 1929 by the author and his students and the contemporary work of other investigators in the field. However, adequate reference to older work and comprehensive reviews is not lacking. A copy of this book should be in every medical library, and graduate students in the field of digestion will have to use it and will be thankful for having it available. Dr. Babkin and the publishers in providing this volume have rendered a definite service to physiology and medicine.

Occupation and Health: Encyclopaedia of Hygiene, Pathology and Social Welfare, Studied from the Point of View of Labour, Industry and Trades. Special Supplement: Industrial Health in Wartime. Paper. Price, 25 cents; 1s. Pp. 39. Montreal: International Labour Office, 1944.

Industrial Health in Wartime reviews recent pertinent literature under headings of silicosis, metal poisoning, insecticides and fumigants, carbon monoxide, carbon disulfide, benzene and its homologues, explosives, rubber, chlorinated naphthalenes and diphenyls, radioactive luminous paints and x-rays, toxic limits, caisson sickness, hygiene in aviation and skin diseases, over the signature of Dr. Ludwig Teleki. Bibliographies are attached to each chapter and contain references for the period 1940-1942. A short general bibliography is also included.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

POSSIBLE HAZARDS FROM FILARIASIS IN THE UNITED STATES

To the Editor:—**Recently I was reading an article on filariasis by James T. Culbertson, Ph.D., in the July issue of the *American Journal of Nursing*. In this article it is implied that there is a definite danger of transmission of this disease from returned veterans infected with it to healthy persons in the United States, including New England, because infection is spread through the common house species of mosquito. This is a definite industrial problem because not a few of these men are working in schools learning welding with our native population in areas where mosquitoes are prevalent. Will you kindly let me know just the extent of this hazard and whether or not any preventive measures could be or should be taken.**

David W. Parker, M.D., Manchester, N. H.

ANSWER.—Dr. Culbertson, in the article referred to, states that "with an abundance of suitable mosquito vectors available almost everywhere in this country, the transfer of the infection to native Americans, not only from these infected immigrants but also from the returning infected service men, seems possible and poses a problem to which public health authorities must give careful scrutiny."

The transmission of filariasis from returning infected troops is possible but probably will be exceedingly rare for a number of reasons. The transmission of filariasis by mosquitoes is somewhat hazardous to them. Heavy infections may result fatally to the mosquitoes. Further, there is no multiplication of the parasite in the mosquito as there is in malaria; hence the mosquito must secure from human blood a larva for every worm it transmits to a new victim. Further, it is believed that the infectious larva is not injected into the blood stream of man by the mosquito but is merely deposited on man's skin and must make its own way into the blood stream. These factors militate against transmission from man to man. In many parts of the United States, although mosquitoes are considered to be a pest and are certainly abundant, their numbers do not begin to approach those found in heavy filaria infected areas. It is possible, however, that through a fortuitous combination of all circumstances a mosquito might bite an infected person in this country and live to reinfect another person.

A number of years ago a large group of Negroes from a filaria infected area were imported into Charleston, S. C. Because of the climate there, mosquitoes can breed much of the year and in the early days before mosquito control they were unusually abundant. Thus the unusual combination of a large number of filaria infected individuals and a large number of mosquitoes much of the year resulted in the transmission of filariasis to a considerable number of persons in Charleston. A survey made there by Johnson in 1915 of 400 individuals composed largely of routine hospital admissions revealed an infection rate of 19.25 per cent. Within the last few years control measures to eliminate mosquitoes in the Charleston area have been pushed vigorously, and the screening of homes has become much more common. For these and possibly other reasons the transmission of filariae in the area has practically ceased and no new infections have occurred in Charleston in the past few years. In other words, the infection is dying out. If under the more or less ideal conditions of climate and a large initial infection this disease died out in Charleston, it does not seem likely that it will spread in the Northern areas of the United States, where mosquitoes are found in numbers only during the hot summer months.

Filaria infected persons have been reported from Columbia, Beaufort and Georgetown, S. C., Jacksonville, Fla., and Mobile, Ala. (Francis), Philadelphia, (Flint) and Boston (Lothrop and Pratt). These persons all give a history of having lived in Charleston, S. C., or having come from a filarial area in the tropics. No endemic foci or secondary cases arising from these infections have been reported, although the climate of several of these areas is favorable for mosquitoes and they are found in considerable abundance. In recent years thousands of Puerto Ricans and inhabitants of other infected Caribbean countries have entered the United States and made their homes here. A number of these individuals harbor large numbers of microfilariae in their blood but do not appear to have been the cause of additional cases of filariasis in this country.

On the other hand, filaria infections have been reported in individuals who have never been to Charleston, S. C., or out of the United States. Dunn reports such an infection in Philadelphia, Slaughter two from Richmond, Va., and Mastin one from Mobile, Ala. Presumably these infections were acquired in these areas.

It is believed that the evidence at hand can be summarized as follows: It is remotely possible that returning filaria infected individuals may transmit, through mosquitoes, their infection to other individuals in this country. This occurrence, however, is extremely unlikely, and although the possibility must be borne in mind, it does not appear likely to be of any great importance.

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Dunn, Thomas D.: A Case of Filaria Sanguinis Hominis, *Tr. Coll. Physicians of Philadelphia* **20**: 81, 1898.
Slaughter, R. M.: Two New Cases of Filaria Sanguinis Hominis, *M. News* **59**: 649 (July-Dec.) 1891.
Mastin, William M.: The History of Filaria Sanguinis Hominis, Its Discovery in the United States and Especially the Relationship of the Parasite to Chylocele of the Tunica Vaginalis Testis, *Ann. Surg.* **8**: 321 (July-Dec.) 1888.

QUARANTINE FOR POLIOMYELITIS

To the Editor:—**The distant poliomyelitis involved area (Louisville, Ky., and Charlotte, N. C.) our local school board in a quandary. Owing to pressure of a citizen, the school board has passed a resolution to quarantine all students and teachers who are not in the county. Actually the board intends to prohibit both from attending school until they have been in the county two weeks. This does not effect a quarantine, because all are free to mingle when school is not in session and may contact one another at picture shows or other places. On the surface of it the effort seems to spell itself before it is put in effect. As a physician I suggest that, until the poliomyelitis problem is solved, all that is reasonable to do is to put into effect the well known rules of communicable diseases, namely isolate the victim, quarantine those exposed. It seems rather arbitrary to rule a blanket quarantine. A county line has nothing to do with where or whether a person contracts a disease. A restriction of this kind certainly works hardship and extra expense (for teachers to pay board and the like) without accomplishing its purpose. So far as I know no student or teacher is coming here from the area around Louisville or Charlotte, yet all must be kept out of school until they have been in this county two weeks. Will you give me some statement as to whether the health rules known to all, as mentioned, are enough to use as a guide in handling this problem? Your recommendation will be appreciated, owing to the fact that the board's action seems rather radical.**

M.D., Florida.

ANSWER.—There is no evidence that rigid quarantine of age groups is of any effect in the control of the spread of poliomyelitis. This but tends to spread panic and fear. There is no scientific reason for prohibiting persons from attending school until they have been in the county for two weeks. Most public health authorities agree that even in the presence of an epidemic there is no reason for not opening schools.

FLUORIDE FOR THE PREVENTION OF DENTAL CARIES

To the Editor:—**I have been following the discussion on the advantages of fluoride in the prevention of dental caries and should like to obtain an authoritative opinion as to the practicability of using it as a prophylactic measure. What are the practical hazards, and why is it not being used more widely in private practice?**

M.D., Massachusetts.

ANSWER.—The use of fluoride in the prevention of dental caries is in the experimental stage. A large amount of epidemiologic evidence shows that children who have used continuously since birth a domestic water containing as little fluoride as 1 part per million have only about one-third the amount of dental caries of children who have used a fluoride free water. This observation points to the probability that low fluorination of the public water supply may achieve an appreciable degree of mass control of dental caries. Several long term studies (ten to fifteen years) are being planned to test this hypothesis by fluorinating selected fluorine free city water supplies. Faust has recently estimated the cost of raising a fluorine free water supply to 1 part per million as 7.5 cents per person annually. Such control procedures would presumably be of value only to those born subsequent to the low fluorination of the public water supply, e. g. those who calcified their teeth while using a water with this optimal concentration. Whether or not such procedures would be effective in inhibiting dental attack in persons whose permanent teeth are erupted awaits further investigation.

Other investigators have directed their attention to topical application of fluoride in order to learn whether or not post-eruptive fluorine therapy can be utilized as a prophylactic measure for (*a*) that third of the population dependent on private

wells or other supplies for their source of water and (*b*) that part of the population whose permanent teeth have already erupted.

Several studies along these lines involving groups of school children have been reported. In each an appreciable reduction in the incidence of dental caries has been reported following multiple application of relatively high fluoride concentrations. In one study involving young men in a military population no change in dental caries attack was observed following a single application of a fluoride solution of 5,000 parts per million. Additional studies in this field are essential to determine the effectiveness of this therapy, the most desirable fluoride solution, the most efficacious concentration and the optimal number of applications to the teeth.

No practical hazards are known at this time, but much research is still needed to clarify some of the points discussed before recommendations for its general use seem warranted.

BURNS FROM LITHIUM

***To the Editor:*—An industrial plant has asked me to outline treatment and prophylaxis for burns by lithium chloride and hydroxide which occur on the hands, arms, face and legs and are penetrating, ulcerating burns. Is there any preparation that can be applied to the exposed surfaces for prevention?**

M.D., Pennsylvania.

ANSWER.—Lithium is a soft metal with a silvery luster, having a specific gravity of 0.59. It melts at 180 F. and burns at 200 F. In order to prevent it from oxidizing, it is kept in petroleum. It readily decomposes in water, forming lithium hydroxide. Lithium, therefore, closely resembles sodium. Lithium chloride is similar to sodium chloride except that it deliquesces in air. Lithium hydroxide is caustic in its action, similar to sodium hydroxide. If lithium chloride enters abrasions it can cause erosion and ulceration of the skin. Lithium hydroxide can cause ulcers in the skin and in the nasal mucosa similar to those caused by sodium hydroxide.

The prevention of burns by lithium hydroxide is the same as the prevention of burns from sodium hydroxide; namely, those handling the material should wear rubber gauntlets and rubber aprons in order to protect the arms and legs. Transparent face shields will give protection to the face. Protective ointments are less efficacious. If they are used they should be of the lanolin-castor oil type described as type 3 in "Protective Ointments and Industrial Cleansers" by Louis Schwartz, published in the *Medical Clinics of North America* (**26**:1195 [July] 1942). The workers should also be instructed to insert petroleum jelly in the nostrils several times a day. In addition to this the tanks, vats or other containers of lithium hydroxide should be covered when not in use and vented by suction vents when they are in use so as to prevent exposure from vapors.

Workers should be instructed that if they get lithium hydroxide on the skin or clothing they should immediately flush it with water. Ulcers should be cleaned of crust and pus and treated aseptically.

SEDIMENT IN GASOLINE FUEL LINE

***To the Editor:*—In trying to suck gasoline through the fuel pump on his automobile, a man received some finely granular precipitate in his mouth. About ten minutes later he complained of severe burning of his mouth and lips, as if he had been burned by a corrosive poison. However, there was slight, if any, coloration of the tissues. At the time he received this material in his mouth he vomited and later ate a good supper but during the night had severe cramps in the abdomen, which cleared up rapidly with a milk and egg diet and calcium gluconate intravenously. What is this sludge that forms in gasoline cans and carburetors? Does it contain lead? If so, how soluble is it and what amount would be necessary to cause an acute lead colic? How is tetraethyl lead poisonous? Is it other than as a lead poison or does the tetraethyl have any poisonous property and would this cause any other symptoms than an acute lead colic?**

John G. Beck, M.D., Sturgeon Bay, Wis.

ANSWER.—Most of the sludge deposited along an automobile fuel line is ordinary dirt. This is admixed with traces of waxes, paraffins, zinc chloride and possibly a trace of lead and dyes. The quantity of any one substance is not likely to represent any prospective toxicity. If an appreciable quantity of gasoline was swallowed, this becomes the likely source of irritation of the mouth and lips, abdominal cramps, and similar symptoms. The quantity of tetraethyl lead in a gallon of gasoline does not lend plausibility to the idea of lead poisoning from an uncertain swallow of this material. Tetraethyl lead to a substantial degree resembles in its injurious properties other forms of lead but with two noteworthy differences: Tetraethyl lead along with some other organic compounds is absorbable through the skin, while inorganic lead compounds are not. Also tetraethyl lead appears to have a predilection for action on the central nervous system to an extent or frequency unknown for inorganic lead compounds. It may be doubted that in the instance described in this query any lead poisoning occurred.

HYPERTENSION AND OBSTRUCTION OF THE URINARY TRACT

***To the Editor:*—How is the hypertensive state associated with chronic urinary retention produced? Particularly in question is that type of hypertension which accompanies obstruction of the neck of the bladder which subsides after decompression.**

M.D., North Carolina.

ANSWER.—Elevation of blood pressure following obstruction of the urinary tract has been frequently observed since its first description in the latter half of the nineteenth century. Secondary hypertension occurs in about one third of all cases of prostatic obstruction. The definite lowering of blood pressure after the relief of an obstruction in the urogenital tract has led many to postulate that all patients with hypertension have some interference with urinary flow. Many studies indicate that all urinary causes of hypertension must be excluded before the diagnosis of essential hypertension can be established. Since not all patients have a lowering of blood pressure on the relief of urinary obstruction, there are other causes of hypertension.

Some of the more recent references to the literature on this subject include:

Hayes, B. A., and Ashley, J. D.: Urologic Factors Influencing Hypertension, *J. Urol.* **50**: 366 (Sept.) 1943.

Branch, W. F., and Wood, W. W., Jr.: Clinical Perinephritis and Its Effect on Blood Pressure, *Tr. Am. A. Genito-Urin. Surgeons* **35**: 87, 1943.

Wosika, P. H.; Jung, F. T., and Maher, C. C.: Urologic Hypertension as an Entity, *Am. Heart J.* **24**: 483 (Oct.) 1942.

Weiss, Edward, and Chasis, Herbert: Failure of Nephrectomy to Influence Hypertension in Unilateral Kidney Disease, THE JOURNAL, Oct. 2, 1943, p. 277.

BIOPSY AND SPREAD OF CANCER TISSUE

***To the Editor:*—Can you give me statistics about the spreading of cancer cells after biopsy? Are there any clinical reports on that subject, especially concerning biopsy of cancerous diseases of the tonsils, tongue and larynx?**

Zdenko V. De Dworzak, M.D., Santa Monica, Calif.

ANSWER.—There is no evidence to indicate that biopsies performed under proper circumstances cause the spread of cancer cells. The literature contains numerous reports on the subject. There are probably no monographs dealing exclusively with this problem, but a discussion of the subject can be found in various textbooks dealing with cancer.

CONSTIPATION AND HYPERTROPHIED HUSTON'S VALVES

***To the Editor:*—A woman aged 60 has chronic constipation with an occasional tendency to slight prolapse. She has a mild cancer phobia. She was recently examined and told that the condition was probably due to hypertrophied Huston's valves, and an operation was advised to section the valves. She was told there would be seven to eight stools a day for several months and that she should remain in the vicinity for observation during this period. Is this a well recognized operation?**

M.D., Colorado.

ANSWER.—Constipation due to hypertrophied Huston's valves is a rare contingency. Operations on these valves at no time remove the cause of the constipation. The inspissated stool is initiated higher up in the colon and has nothing at all to do with the valvular derangement of the rectum. Unless x-ray evidence can show that there is a definitely dilated colon above these valves, their enlargement plays no part in the disturbed physiology of the gastrointestinal tract. Frequently patients of this age group suffer from constipation due to vitamin B_1 deficiency. Furthermore, it has been noted that in these individuals hypothyroid manifestations are not at all uncommon. This phase of the clinical picture should be investigated thoroughly.

TICK REPELLENTS

***To the Editor:*—Can you tell me of any substance or combination of substances that will act as a repellent of ticks? The Ozarks abound with several varieties of them, the so-called seed ticks, deerticks and others of like size. I am aware of methods of removal such as chloroform, kerosene and heat. Is there any repellent that will keep the ticks off the skin even if they do get on the clothing?**

Wallace A. Belsey, M.D., Campbell, Mo.

ANSWER.—Indalone, sold by the Skol Company, Inc., 250 East 43d Street, New York City 17, has been well recommended as a repellent for ticks. This synthetic compound is alpha, alpha-dimethyl-alpha-carbo-butoxydihydro-gamma-pyrone.

Another material has been developed for use by the armed forces and is known as 622. Unfortunately, only enough supplies are available for the armed forces at the present time. Undoubtedly, when the needs of the armed forces have been satisfied, other tick repellents of great efficiency will be made available to the general public.